

Bachelor of Science in Biology and Education with Endorsement in Elementary Education			
MAJOR REQUIREMENTS/BIOLOGY: 45 Credits (a)		MAJOR REQUIREMENTS/EDUCATION: 36 Credits (c)	
BY-109: Intro to Biodiversity & Evolution	4.0	EDL-201: Educational Psychology	3.0
BY-110: Intro to Cell & Molecular Biology	4.0		
BY-205: Zoology	3.0		
BY-214: Botany	3.0		
BY-223: General Microbiology	4.0	EDL-206: Child and Adolescent Development	3.0
BY-310: Biochemistry and Laboratory	4.0		
BY-370: Cell Biology	3.0		
BY-375L: Lab in Molecular & Cellular Biology	3.0		
BY-423: Genetics	4.0	ED-250: Foundations of Teaching and Learning	3.0
BY-425: Principles of Developmental Biology	4.0		
Take 8 Credits of Biology from the Following Courses:	8.0	EDL-326: Literacy Instruction in K-6 Educational Settings I	3.0
BY-211: Physiology with Anatomy I			
BY-212: Physiology with Anatomy II			
BY-324: Applied Microbiology		ED-320: Teaching Students with Diverse Needs	3.0
BY-340: Ecology			
BY-406: Introduction to Neurosciences			
BY-410: Molecular Biology		EDL-327: Literacy Instruction in K-6 Educational Settings II	3.0
BY-475: Endocrinology			
BY-499: Independent Study in Biology			
BY-495: Senior Seminar	1.0	ED-360: Methods of Teaching Elementary Mathematics	3.0
INTERDISCIPLINARY REQUIREMENTS: 30 Credits			
MA-115: Pre-Calculus Modeling for Biological Sciences	3.0	ED-361: Methods of Teaching Science for Elementary School	3.0
or MA-116: Calculus for the Biological Science			
MA-151: Statistics with Applications	3.0	ED-362: Teaching Elementary Social Studies	3.0
CE-111: General Chemistry	3.0		
CE-111L: General Chemistry Lab	1.0		
CE-112: General Chemistry	3.0		
CE-112L: General Chemistry Lab	1.0		
CE-241: Organic Chemistry	3.0		
CE-241L: Organic Chemistry Lab	2.0	9 Credits as Follows (d):	
CE-242: Organic Chemistry	3.0	ED-416: Clinical Practice AND	8.0
PH-105: Physics for the Life Sciences	3.0	ED-416S: Seminar in Clinical Practice	1.0
PH-105L: Physics for the Life Sciences Lab	1.0		
PH-106: Physics for the Life Sciences	3.0		
PH-106L: Physics for the Life Sciences Lab	1.0		

(b) BY-102, BY-104, BY-105, and BY-106 are not available to BY majors.

(c) Minimum grade of "C" required for Education Courses

(d) Students must complete the appropriate test requirement(s) with a passing score PRIOR to Clinical Practice.

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GENERAL EDUCATION REQUIREMENTS: 36 Credits		Credits
First Year Seminar	FY-101: First Year Seminar *(Select Section "BY")	3.0
Reading and Writing	EN-101: College Composition I	3.0
	EN-102: College Composition II	3.0
Mathematics	Fulfilled in Biology Interdisciplinary Requirements with Math Courses	0.0
Natural Sciences	Fulfilled in Major Requirements with required BY courses	0.0
Literature	3 Credits from courses designated with Course*Type: LIT	3.0
Aesthetics and Creativity	3 Credits from Art, Music, Theatre, or Dance	3.0
Technological Literacy	IT-102: Information Technology for Scientists	3.0
Reasoned Oral Discourse	Fulfilled in Major Requirements with BY-375L, or ED-320	0.0
Historical Perspective	3 Credits from courses designated with Course*Type: HS.SV	3.0
Social Science	3 Credits from courses designated with Course*Type: SS.SV	3.0
Historical Perspective/Social Sciences	3 Credits from courses designated with Course*Type: HS.SV	3.0
	or 3 Credits from courses designated with Course*Type: SS.SV	
Interdisciplinary Perspectives	3 Credits from courses designated with Course*Type: ISP	3.0
Cultural Diversity and Global Understanding or Foreign Language	3 Credits from courses designated with Course*Type: CD	6.0
	3 Credits from courses designated with Course*Type: GU	
	or 6 Credits from the SAME foreign language	
Experiential Education	One course designated with Course*Type: EX	0.0
Writing Intensive	Two courses from Biology (BY) designated with Course*Type: WT	0.0
	Two courses from Education (ED, EDL, EDS) designated with Course*Type: WT	0.0
		0.0
		0.0

Minimum Credits for Bachelor of Science in Biology and Education with Endorsement in Elementary Education = 147.0	
ADDITIONAL ENDORSEMENTS AVAILABLE:	
• TSD - Teacher of Students with Disabilities - Elementary	• ESL - English as a Second Language - Elementary
• P-3 Early Childhood Endorsement	• MID-SCI - Middle School Science

NOTES:

* 58 credits must be completed at the 200 level or higher.

** Education majors are required to have an overall GPA of 3.00 for State Certification.

***By state regulation, all Education Majors seeking content area endorsement must complete 30 content credits (12+ credits at the 300+ level).