

**Bachelor of Science in Biology and Education with Endorsement in Elementary Education**

<b>MAJOR REQUIREMENTS/BIOLOGY: 45 Credits (a)</b>	<b>MAJOR REQUIREMENTS/EDUCATION: 36 Credits (c)</b>
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BY109: Intro to Biodiversity & Evolution 4.0 BY110: Intro to Cell & Molecular Biology 4.0 BY205: Zoology 3.0 BY214: Botany 3.0 BY223: General Microbiology 4.0 BY310: Biochemistry and Laboratory 4.0 BY370: Cell Biology 3.0 BY375L: Lab in Molecular & Cellular Biology 3.0 BY423: Genetics 4.0 BY425: Principles of Developmental Biology 4.0  <b>Take 8 Credits of Biology from the Following Courses:</b> 8.0 BY-211: Physiology with Anatomy I BY-212: Physiology with Anatomy II BY-324: Applied Microbiology BY-340: Ecology BY-406: Introduction to Neurosciences BY-410: Molecular Biology BY-475: Endocrinology BY-499: Independent Study in Biology  BY495: Senior Seminar 1.0	EDL201: Educational Psychology 3.0  EDL206: Child and Adolescent Development 3.0  ED250: Foundations of Teaching and Learning 3.0  EDL326: Literacy Instruction in K-6 Educational Settings I 3.0  ED320: Teaching Students with Diverse Needs 3.0  EDL327: Literacy Instruction in K-6 Educational Settings II 3.0  ED360: Methods of Teaching Elementary Mathematics 3.0
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**BIOLOGY OUTSIDE MAJOR REQUIREMENTS: 30 Credits**

MA115: Intro to Math. Models in Bio. Science 3.0 <b>or</b> MA116: Calculus for the Biological Science <b>or</b> MA116: Calculus for the Biological Science  MA151: Statistics with Applications 3.0  CE111: General Chemistry 3.0 CE111L: General Chemistry Lab 1.0 CE112: General Chemistry 3.0 CE112L: General Chemistry Lab 1.0 CE241: Organic Chemistry 3.0 CE241L: Organic Chemistry Lab 2.0 CE242: Organic Chemistry 3.0 PH105: Physics for the Life Sciences 3.0 PH105L: Physics for the Life Sciences Lab 1.0 PH106: Physics for the Life Sciences 3.0 PH106L: Physics for the Life Sciences Lab 1.0	ED361: Methods of Teaching Science for Elementary School 3.0  ED362: Teaching Elementary Social Studies 3.0  <b>9 Credits as Follows (d):</b> ED416: Student Teaching <b>AND</b> 8.0 ED416S: Seminar in Student Teaching 1.0
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(a) Courses BY101 through BY108 are not used to calculate major GPA.  
 (b) BY102, BY104, BY105, and BY106 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 Student Teaching.

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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	EN101: College Composition I	3.0
	EN102: College Composition II	3.0
Mathematics	Fulfilled in Biology Outside Major Requirements with MA115, or MA116, or MA125, or MA151	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	IT102: Information Technology for Scientists	3.0
Reasoned Oral Discourse	Fulfilled in Major Requirements with BY375L, or ED320	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
		0.0
	Two courses from Education (ED, EDL, EDS) designated with Course*Type: WT	0.0
		0.0

Minimum Credits for Bachelor of Science in Biology and Education with Endorsement in Elementary Education = 147.0

- | ADDITIONAL ENDORSEMENTS AVAILABLE:                         |   |
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| • 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).