

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

**MAJOR REQUIREMENTS/BIOLOGY: 45 Credits (a)**      **MAJOR REQUIREMENTS/EDUCATION: 24 Credits (c)**

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| BY109: Intro to Biodiversity & Evolution      4.0<br>BY110: Intro to Cell & Molecular Biology      4.0<br>BY205: Zoology      3.0<br><br>BY214: Botany      3.0<br><br>BY223: General Microbiology      4.0<br>BY310: Biochemistry and Laboratory      4.0<br>BY370: Cell Biology      3.0<br>BY375L: Lab Molecular & Cell      3.0<br>BY423: Genetics      4.0<br>BY425: Principles of Developmental Biology      4.0<br><br><b>8 crs. of BY electives from among:</b> 8.0<br>BY211, BY212, BY340, BY324, BY406, BY410, BY475, BY499<br><br>BY495: Senior Seminar      1.0 | ED250: Foundations of Teaching and Learning      3.0<br>EDL201: Educational Psychology      3.0<br>EDL206: Child and Adolescent Development      3.0<br>ED319: Content Literacy      3.0<br>ED319N: NCATE Assessment      0.0<br>ED320: Teaching Students with Diverse Needs      3.0<br><br><b>9 Credits as Follows (d):</b><br><br>ED416: Student Teaching <b>AND</b> 8.0<br>ED416S: Seminar in Student Teaching      1.0<br><br><b>*OR*</b><br><br>ED417: Supervised Student Teaching <b>AND</b> 8.0<br>ED417S: Seminar - Supervised Student Teaching      1.0 |
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**BIOLOGY OUTSIDE MAJOR REQUIREMENTS: 30 Credits**      **EDUCATION METHODS REQUIREMENTS: 6 Credits (c)**

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| MA115: Intro to Mathematical Mod. in Bio.<br><b>*OR*</b> MA116: Calculus for Biological Sciences<br><b>*OR*</b> MA125: Calculus with Analytic Geometry I      3.0<br><br>MA151: Statistics with Applications      3.0<br><br>CE111: General Chemistry      3.0<br>CE111L: General Chemistry Lab      1.0<br>CE112: General Chemistry      3.0<br>CE112L: General Chemistry Lab      1.0<br>CE241: Organic Chemistry      3.0<br>CE241L: Organic Chemistry Lab      2.0<br>CE242: Organic Chemistry      3.0<br><br>PH105: Physics for the Life Sciences      3.0<br>PH105L: Physics for the Life Sciences Lab      1.0<br><br>PH106: Physics for the Life Sciences      3.0<br>PH106L: Physics for the Life Sciences Lab      1.0 | ED369: Methods of Teaching Science for the Secondary Teacher Part I<br><b>*OR*</b> ED375: Integrated Secondary Teaching Methods Part I      3.0<br><br>ED370: Methods of Teaching Science for the Secondary Teacher Part I<br><b>*OR*</b> ED376: Integrated Secondary Teaching Methods Part I      3.0<br><br><p style="text-align: center;"><b>EDUCATION OUTSIDE MAJOR REQUIREMENTS: 3 Credits</b></p> PY103: Introduction to Psychology      3.0 |
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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: 33 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, and/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  | Fulfilled in Education Outside Major Requirements with PY103  | 0.0     |
| Historical  | 3 Credits from courses designated with Course*Type: HS.SV<br>or 3 Credits from courses designated with Course*Type: SS.SV   | 3.0     |
| 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<br>and 3 Credits from courses designated with Course*Type: GU<br>or 6 Credits from the SAME foreign language | 6.0     |
| 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     |

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| <b>Minimum Credits for Bachelor of Science in Biology and Education with Endorsement in Secondary Education in Biology = 141.0</b>                         |
| <b>ADDITIONAL ENDORSEMENTS AVAILABLE:</b><br>• TSD - Teacher of Students with Disabilities - Secondary<br>• ESL - English as a Second Language - Secondary |

- NOTES:**
- \* 58 credits must be completed at the 200 level or higher.
  - \*\* Education majors are required to have an overall GPA of 2.75 for State Certification.
  - \*\*\*By state regulation, all Education Majors seeking content area endorsement must complete 12+ credits at the 300+ level in the content major.