**Applied Biological Sciences/Secondary Education Concentration**

**I. English Proficiency (6 hrs)**

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<th>Hrs Cr</th>
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(University requirement - "C" min required)

- ENG 101 First-Year Comp (3) and
- ENG 102 First-Year Comp (3) or, if eligible,
- ENG 105 Adv First-Year Comp (3)

(see Catalog for eligibility requirements)

Sub Total (I) ________

**II. General Studies (35 hrs)** (see Catalog for approved courses)

**A. Humanities & Social Sciences (15 hrs)**

- Combined requirement: Six hours in one area, nine hours in the other, and three hours must be upper-division.

- ** Humanities/Fine Arts (6-9 hrs min) (HU)**
- ** Social/Behavioral Sciences (6-9 hrs min) (SB)**

**Awareness Areas**: Cultural, Global and Historical awareness areas must be satisfied. Courses that are listed for a core and awareness area may satisfy both requirements concurrently, as may courses that are listed for more than one awareness area.

- C:
- G:
- H:

**B. Literacy/Critical Inquiry (6 hrs min)**

- L:

**C. Natural Sciences (8 hrs min)**

- SQ/SG: BIO 187 General Biology 1 (SQ) (4)
- SQ/SG: BIO 188 General Biology 2 (SQ) (4)

- **D. Mathematical Studies (6 hrs min)**

- MA: MAT 210 Brief Calculus (3)
- CS: ABS 350 Applied Statistics or Equivalent (3)

Sub Total (II) ________

**III. Applied Biological Sciences Core (**May be cross listed with General Studies**)

- BIO 187 General Biology I (4) SG
- BIO 188 General Biology II (4) SQ
- ABS 270 Sustainable Biological Systems (3)
- ABS 302 Ethical and Policy Issues in Biology (2)
- BIO 340 General Genetics (4)
- ABS 350 Applied Statistics or Equivalent (3) CS

Choose one of the three courses below:

- BIO 360 Animal Physiology (3)

OR

ABS 498 Applied Plant Physiology (4)

OR

ABS 311 Applied Cell Biology (3)
- MAT 210 Brief Calculus (3) MA
- CHM 113 General Chemistry (4) SQ

Total: (30 - 31)

**General Elective required for all Freshmen**

- ASU 101: The ASU Experience (1)

**IV. Seconding Education Concentration Biology Coursework**

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Choose between the two courses below:

- ABS 207 Applied Plant Taxonomy (3)

OR

ABS 355 Vertebrate Zoology (4)
- ABS 370 Ecology (3)
- MIC 205 Microbiology (3)
- MIC 206 Microbiology Laboratory (1)
- ABS 490 Applied Biological Sciences Seminar (1)
- CHM 116 General Chemistry SQ (4)
- PHY 101 Introduction to Physics SQ (4)

Approved Upper-Division Electives (3)

Total: (22 - 23)

Note: BIO 187, BIO 188, MAT 210, and ABS 350 must be used for both General Studies and concentration requirements to allow graduation within 120 hours.

**General elective required for all Freshman**

- ASU 101: The ASU Experience (1)

**V. Secondary Education Course Work**

- BIO 480 Methods of Teaching Biology (3)
- BIO 482 Adv Methods of Teaching Bio (3)
- EDC 354 Educational Media in the Classroom (3)
- EDC 405 Classroom Management K-12 (3)
- EDC 425 Integrated Learning Exp IV:
  - Adv. Mgt & Prof. Knowledge (2)
  - EDC 355 Academ. Instruction for Diverse Learners (3)
- EDP 311 Educational Psychology for Future Teachers (3)
- EDP 313 Childhood and Adolescence (3)
- RDG 301 Literacy & Instr in Cont Areas (3)
- SED 403 Middle and Secondary School Principles, Curriculum, and Methods (3)
- ELL 415 Structured English Immersion (SEI) Methods (3)
- SDE 474 (0-1)
- SDE 484 (10)

Total: (43-51)

**Strongly Recommended**:

- MCE 446 Understanding the Culturally Diverse Child (3)
- SPE 311 Orientation to Education of Exceptional Children (3)
- SB 416 Advanced SEI Methods (3)

**TOTAL PROGRAM HOURS**:

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<tr>
<td>I. English</td>
<td>II. General Studies</td>
<td>III. ABS Core</td>
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<td>Graduation Requirements (Regular Curriculum –120 hours)</td>
<td>Total upper-division hours ________ (minimum required –45)</td>
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