# 2018 - 2019 Major Map

**Biological Sciences (Conservation Biology and Ecology), BS**

**School/College:** College of Liberal Arts and Sciences  
**Location:** Tempe campus

<table>
<thead>
<tr>
<th>Term 1</th>
<th>0 - 15 Credit Hours Critical course signified by 🌟</th>
<th>Hours</th>
<th>Minimum Grade</th>
<th>Notes</th>
</tr>
</thead>
</table>
| 🌟LIA 101: Student Success in the College of Liberal Arts and Sciences | 1 | | | • Mathematics Placement Assessment score determines placement in mathematics and science courses  
• LIA 101 or other First Year Seminar required of all freshman students  
• An SAT, ACT, Accuplacer, IELTS, or TOEFL score determines placement into first-year composition courses  
• Select your career interest area and play me3@ASU. |
| 🌟BIO 281: Conceptual Approaches to Biology for Majors I (SQ) | 4 | C | | |
| 🌟CHM 113: General Chemistry I (SQ) | 4 | C | | |
| ENG 101 or ENG 102: First-Year Composition OR ENG 105: Advanced First-Year Composition OR ENG 107 or ENG 108: First-Year Composition | 3 | C | | |
| 🌟STP 231: Statistics for Life Science (CS) OR STP 226: Elements of Statistics (CS) | 3 | C | | |

Term hours subtotal: 15

<table>
<thead>
<tr>
<th>Term 2</th>
<th>15 - 30 Credit Hours Critical course signified by 🌟</th>
<th>Hours</th>
<th>Minimum Grade</th>
<th>Notes</th>
</tr>
</thead>
</table>
| 🌟BIO 282: Conceptual Approaches to Biology for Majors II | 4 | C | | • Join a student organization  
• Create a resume & Handshake account with the Career & Professional Development Center  
• Explore research opportunities |
| 🌟CHM 116: General Chemistry II (SQ) | 4 | C | | |
| ENG 101 or ENG 102: First-Year Composition OR ENG 105: Advanced First-Year Composition OR ENG 107 or ENG 108: First-Year Composition | 3 | C | | |
| 🌟MAT 251: Calculus for Life Sciences (MA) OR SOS 211: Calculus and Probability for the Life and Social Sciences (MA) | 3 | C | | |
| Elective | 1 | | | |

Complete BIO 281 AND BIO 282 course(s).  
Complete ENG 101 OR ENG 105 OR ENG 107 course(s).  
Term hours subtotal: 15

<table>
<thead>
<tr>
<th>Term 3</th>
<th>30 - 45 Credit Hours Critical course signified by 🌟</th>
<th>Hours</th>
<th>Minimum Grade</th>
<th>Notes</th>
</tr>
</thead>
</table>
| 🌟BIO 320: Fundamentals of Ecology | 3 | C | | • Pre-health students should take CHM 233 and CHM 237 this term. See the pre-health website for more information  
• If CHM 233 and 237 are taken, then CHM 234 and 238 must be taken the following semester  
• Explore extracurriculars (i.e. service learning, community service, internships, research, student involvement, shadowing, etc.)  
• Attend a Study Abroad 101 Session |
| Physical Science Requirement Course | 3 | C | | |
| CLAS Science and Society Elective | 3 | C | | |
| Humanities, Arts and Design (HU) AND Historical Awareness (H) | 3 | | | |
| Literacy and Critical Inquiry (L) | 3 | | | |

Complete First-Year Composition requirement.  
Complete Mathematics (MA) requirement.  
Term hours subtotal: 15

<table>
<thead>
<tr>
<th>Term 4</th>
<th>45 - 61 Credit Hours Critical course signified by 🌟</th>
<th>Hours</th>
<th>Minimum Grade</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>🌟BIO 340: General Genetics</td>
<td>4</td>
<td>C</td>
<td></td>
<td>• Explore or pursue internship opportunities</td>
</tr>
<tr>
<td>Humanities, Arts and Design (HU) AND Global Awareness (G)</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social-Behavioral Sciences (SB)</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

Term hours subtotal: 15
**Complete 2 courses:**

<table>
<thead>
<tr>
<th>Elective</th>
<th>6</th>
</tr>
</thead>
</table>

**Term hours subtotal:** 16

• Meet with the Career & Professional Development Center to learn how to develop skills
• Pre-health students should take CHM 234 and CHM 238 this term. See the pre-health website for more information
• If CHM 233 and 237 are taken, then CHM 234 and 238 must be taken the following semester

**Term 5 61 - 76 Credit Hours Necessary course signified by 🌟**

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Hours</th>
<th>Grade</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO 322: Conservation of Biodiversity</td>
<td>3</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>Upper Division Human Dimensions of Conservation and Ecology</td>
<td>3</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>BIO 345: Organic Evolution</td>
<td>3</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>Social-Behavioral Sciences (SB) AND Cultural Diversity in the U.S. (C)</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elective</td>
<td>3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Term hours subtotal:** 15

• In these Human Dimensions courses, students learn about the human and social dimensions of conservation science
• Pre-health students should take PHY 111 and 113 instead of PHY 101 this term. See the pre-health website for more information
• Meet with your advisor to discuss ways to maximize your remaining time at ASU

**Term 6 76 - 91 Credit Hours Necessary course signified by 🌟**

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Hours</th>
<th>Grade</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upper Division Conservation Biology and Ecology Field Methods</td>
<td>3</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>Upper Division CLAS Science and Society Elective</td>
<td>3</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>Upper Division Social-Behavioral Sciences (SB) OR Upper Division Humanities, Arts and Design (HU)</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upper Division Elective</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elective</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Complete Cultural Diversity in the U.S. (C) AND Global Awareness (G) AND Historical Awareness (H) course(s).</td>
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<td></td>
</tr>
</tbody>
</table>

**Term hours subtotal:** 15

• These Conservation Biology and Ecology courses teach students field (outdoor) and laboratory methods that are commonly used in conservation biology and ecology.
• Pre-health students should take PHY 112 and 114 this term. See the pre-health website for more information
• Use Handshake to research employment opportunities

**Term 7 91 - 106 Credit Hours Necessary course signified by 🌟**

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Hours</th>
<th>Grade</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upper Division Advanced Ecology</td>
<td>3</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>Quantitative &amp; Spatial Analysis Course</td>
<td>3</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>Upper Division Literacy and Critical Inquiry (L)</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upper Division Elective</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elective</td>
<td>3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Term hours subtotal:** 15

• Please note that BIO 421 and BIO 422 are only offered in fall terms. BIO 423 is offered in spring terms. Students who do not complete BIO 421 or BIO 422 in fall of their senior year will need to complete BIO 423 in the spring term immediately following
• These Advanced Ecology courses focus on the sub-disciplines of ecology across levels of biological organization, from individuals to landscapes
• Explore or apply for full-time career opportunities or graduate school
• Meet with your advisor to verify remaining degree requirements have been met

**Term 8 106 - 120 Credit Hours Necessary course signified by 🌟**

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Hours</th>
<th>Grade</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upper Division Advanced Ecology, Biodiversity, Field or Research Course</td>
<td>3</td>
<td>C</td>
<td></td>
</tr>
</tbody>
</table>
### Human Dimensions of Conservation and Ecology
- BIO 304: Plants and Civilization
- BIO 324: Environmental Ethics (HU)
- BIO 412: Conservation in Practice
- BIO 427: Fire (H)
- BIO 434: People and Nature: Ecosystem Services
- BIO 495: Undergraduate Research

### Conservation Biology and Ecology Field Methods
- BIO 410: Techniques in Conservation Biology and Ecology (L)
- BIO 494: Discovering Biodiversity
- BIO 494: Novel Ecosystems
- BIO 498: Sonoran Desert Field Botany

### Physical Science Requirement Courses
- GIS 205: Geographic Information Science I (CS)
- GIS 211: Geographic Information Science II (CS)
- GLG 101: Introduction to Geology I (Physical) (SQ) AND GLG 103: Introduction to Geology I-Laboratory (SQ)
- GPH 111: Introduction to Physical Geography (SQ)
- PHY 101: Introduction to Physics (SQ) or PHY 111: General Physics (SQ) AND PHY 113: General Physics Laboratory (SQ)

### Quantitative & Spatial Analysis Courses
- BIO 411: Quantitative Methods in Conservation and Ecology
- BIO 415: Biometry (CS)
- CSE 100: Principles of Programming with C++ (CS)
- CSE 110: Principles of Programming (CS)
- GIS 311: Geographic Information Science III (CS)
- GIS 470: Advanced Statistics for Geography and Planning (CS)
- GIS 471: Spatial Statistics for Geography and Planning

### Advanced Ecology
- ABS 472: Applied Herpetology
- BIO 360: Animal Physiology
- BIO 361: Animal Physiology Laboratory
- BIO 421: Landscape Ecology
- BIO 422: Ecosystem Ecology
- BIO 423: Population and Community Ecology
- BIO 429: Human Impacts on Ecosystem Functioning
- BIO 461: Comparative Animal Physiology
- BIO 471: Ornithology

### Advanced Human Dimensions of Conservation and Ecology
- BIO 304: Plants and Civilization
- BIO 324: Environmental Ethics (HU)
- BIO 434: People and Nature: Ecosystem Services
- JUS 444: Environment and Justice (L & C)
- SOS 310: Equity, Justice and Sustainability
- SOS 321: Policy and Governance in Sustainable Systems
- SOS 325: The Economics of Sustainability

### Upper Division Elective
- Elective OR BIO 484: Internship OR MIC 484: Internship OR MBB 484: Internship

### Upper Division Advanced Human Dimensions of Conservation and Ecology
- BIO 434: People and Nature: Ecosystem Services
- JUS 444: Environment and Justice (L & C)
- SOS 310: Equity, Justice and Sustainability
- SOS 321: Policy and Governance in Sustainable Systems
- SOS 325: The Economics of Sustainability

### Upper Division Elective
- Elective

### Term hours subtotal: 14

- All students pursuing a B.S. or B.S.P. degree in the College of Liberal Arts and Sciences must complete two courses from the Science and Society list found at https://clas.asu.edu/resources/science-society. At least one of the two courses must be upper division. Students must earn a C or better in the courses, and no more than one of the two can also be used to simultaneously fill a requirement of the major, minor or related area. Science and Society courses cannot also be used to fill the general studies HU, SB, SQ or SG requirements.

- Students must complete BIO 421 or BIO 422 or BIO 423 no later than the eighth term
- Continue to apply for full-time career opportunities or graduate school
Notes:

- Please keep in mind that the applicability of a specific transfer course toward an ASU degree program depends on the requirements of the department, division, college or school in which you are enrolled at ASU. Transfer agreements that guarantee the completion of university level requirements do not necessarily meet college and major requirements. Please consult with an advisor for more information.

General University Requirements Legend

General Studies Core Requirements:
- Literacy and Critical Inquiry (L)
- Mathematical Studies (MA)
- Computer/Statistics/Quantitative Applications (CS)
- Humanities, Arts and Design (HU)
- Social-Behavioral Sciences (SB)
- Natural Science - Quantitative (SQ)
General Studies Awareness Requirements:

- Cultural Diversity in the U.S. (C)
- Global Awareness (G)
- Historical Awareness (H)

First-Year Composition

General Studies designations listed on the major map are current for the 2018 - 2019 academic year.