# 2018 - 2019 Major Map

## Biology, BS

School/College: New College of Interdisciplinary Arts and Sciences

ASLSCBS

## Term 1 - 15 Credit Hours

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Minimum Grade</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO 181: General Biology I (SQ)</td>
<td>4</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>CHM 113: General Chemistry I (SQ)</td>
<td>4</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>ENG 101 or ENG 102: First-Year Composition OR</td>
<td>3</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>ENG 105: Advanced First-Year Composition OR</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENG 107 or ENG 108: First-Year Composition</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MAT 210: Brief Calculus (MA) OR STP 226: Elements of Statistics (CS)</td>
<td>3</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>NEW 101: The ASU New College Experience</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Term hours subtotal:</strong></td>
<td>15</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

An SAT, ACT, Accuplacer, IELTS, or TOEFL score determines placement into first-year composition courses.

Mathematics Placement Assessment score determines placement in mathematics course.

ASU 101 or college-specific equivalent First-Year Seminar required of all freshman students. NEW 101 satisfies this requirement.

IAS 300 (3 credit hours) is required for all transfer students in place of NEW 101.

Students considering medical school, graduate school, or research are encouraged to enroll in MAT 270 (and 271 the following semester) in place of MAT 210 so that they have a full year of calculus. This may require more than 120 hours to complete the degree.

Select your career interest area and play me3@ASU.

## Term 2 - 15 - 30 Credit Hours

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Minimum Grade</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO 182: General Biology II (SG)</td>
<td>4</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>CHM 116: General Chemistry II (SQ)</td>
<td>4</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>ENG 101 or ENG 102: First-Year Composition OR</td>
<td>3</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>ENG 105: Advanced First-Year Composition OR</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENG 107 or ENG 108: First-Year Composition</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MAT 210: Brief Calculus (MA) OR STP 226: Elements of Statistics (CS)</td>
<td>3</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>Elective</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Complete ENG 101 OR ENG 105 OR ENG 107 course(s).</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Term hours subtotal:</strong></td>
<td>15</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Students taking MAT 270 AND MAT 271 in place of MAT 210 still must complete a Statistics course. Students wishing to take STP 226 can take MAT 271 in place of STP 226 in term 2, and then take STP 226 in a later term.

Students considering medical school, graduate school, or research are encouraged to enroll in STP 280 (and 281 the following semester) in place of STP 226 so that they have a full year of statistics. Note that MAT 270 and 271 are pre-reqs for STP 280 and 281 respectively. This may require more than 120 hours to complete the degree.

## Term 3 - 30 - 44 Credit Hours

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Minimum Grade</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHY 111: General Physics (SQ) AND PHY 113: General Physics Laboratory (SQ)</td>
<td>4</td>
<td>C</td>
<td>Develop your research skills.</td>
</tr>
<tr>
<td>Term 4 44 - 60 Credit Hours</td>
<td>Critical course signified by [1]</td>
<td>Hours</td>
<td>Minimum Grade</td>
</tr>
<tr>
<td>----------------------------</td>
<td>----------------------------------</td>
<td>-------</td>
<td>---------------</td>
</tr>
<tr>
<td>PHY 112: General Physics (SQ) AND PHY 114: General Physics Laboratory (SQ)</td>
<td>4</td>
<td>C</td>
<td>• Explore an internship or an IGLE international experience.</td>
</tr>
<tr>
<td>CHM 234: General Organic Chemistry II AND CHM 238: General Organic Chemistry Laboratory II</td>
<td>4</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>Humanities, Arts and Design (HU) AND Global Awareness (G)</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social-Behavioral Sciences (SB)</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elective</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Complete CHM 113, CHM 116 course(s).</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Term hours subtotal:</td>
<td></td>
<td>16</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Term 5 60 - 76 Credit Hours</th>
<th>Necessary course signified by [2]</th>
<th>Hours</th>
<th>Minimum Grade</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>LSC 347: Fundamentals of Genetics AND LSC 348: Fundamentals of Genetics Laboratory</td>
<td>4</td>
<td>C</td>
<td>• IAS 300 (3 credit hours) is required for all transfer students.</td>
<td></td>
</tr>
<tr>
<td>Upper Division Related Area Electives</td>
<td>3</td>
<td>C</td>
<td>• Upper Division Related Area Elective must be courses designated for Biology (or related) majors only, and should be courses that require BIO 181 and BIO 182 as a prerequisite at a minimum. Seek advisor approval. A maximum of 3 credit hours from BIO/LSC 499 or BIO/LSC 493 and a maximum of 3 credit hours from BIO/LSC 484 may be applied to this requirement.</td>
<td></td>
</tr>
<tr>
<td>Upper Division Literacy and Critical Inquiry (L) OR IAS 300: Adult Career Development (L or SB)</td>
<td>3</td>
<td></td>
<td>• Develop your professional online presence.</td>
<td></td>
</tr>
<tr>
<td>Cultural Diversity in the U.S. (C)</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Humanities, Arts and Design (HU)</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Term hours subtotal:</td>
<td></td>
<td>16</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Term 6 76 - 90 Credit Hours</th>
<th>Necessary course signified by [3]</th>
<th>Hours</th>
<th>Minimum Grade</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upper Division Distribution Course</td>
<td>4</td>
<td>C</td>
<td>• Use Handshake to research employment opportunities.</td>
<td></td>
</tr>
<tr>
<td>Historical Awareness (H)</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upper Division Language and Cultures: Requirement satisfied through the following: * Completion of six semester hours of upper-division courses that have a Global Awareness (G) or Cultural Diversity (C) designation, in addition to the courses used to meet the University General Studies requirements or four (4) sequential semesters of one foreign language or two (2) semesters of a current computer language. Adjustment to upper division hours is required if lower division courses are used.</td>
<td>3</td>
<td>C</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>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Term hours subtotal:</td>
<td></td>
<td>14</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Term 7 90 - 106 Credit Hours</th>
<th>Necessary course signified by [4]</th>
<th>Hours</th>
<th>Minimum Grade</th>
<th>Notes</th>
</tr>
</thead>
</table>

Page 2
**Upper Division Distribution Course**  
4  C

**Upper Division Related Area Electives**  
3  C

**Upper Division Humanities, Arts and Design (HU) OR Upper Division Social-Behavioral Sciences (SB) (ASB 353 OR SOC 353 recommended)**  
3

*Complete 2 courses:*

**Elective**  
6

Term hours subtotal: 16

---

**Term 8 106 - 120 Credit Hours**  

**Upper Division Distribution Course**  
4  C

**Upper Division Language and Cultures: Requirement satisfied through the following:**

* Completion of six semester hours of upper-division courses that have a Global Awareness (G) or Cultural Diversity (C) designation, in addition to the courses used to meet the University General Studies requirements or four (4) sequential semesters of one foreign language or two (2) semesters of a current computer language. Adjustment to upper division hours is required if lower division courses are used.

**Upper Division Elective OR LSC 484: Internship**  
3

Term hours subtotal: 14

---

- Students must select a minimum of one lecture or lecture/lab combined course from each one of the three distribution areas: 1. Cellular, Molecular, and Physiological Biology, 2. Integrative Systems Ecology, 3. Organismal Biology.

- Upper Division Related Area Elective must be courses designated for Biology (or related) majors only, and should be courses that require BIO 181 and BIO 182 as a prerequisite at a minimum. Seek advisor approval. A maximum of 3 credit hours from BIO/LSC 499 or BIO/LSC 493 and a maximum of 3 credit hours from BIO/LSC 484 may be applied to this requirement.

---

**Term Hours Subtotal:** 16

---

- Students must select a minimum of one lecture or lecture/lab combined course from each one of the three distribution areas: 1. Cellular, Molecular and Physiological Biology, 2. Integrative Systems Ecology, 3. Organismal Biology.

---

**Upper Division Distribution Course**  
4  C

**Upper Division Related Area Electives**  
3  C

**Upper Division Humanities, Arts and Design (HU) OR Upper Division Social-Behavioral Sciences (SB) (ASB 353 OR SOC 353 recommended)**  
3

*Complete 2 courses:*

**Elective**  
6

Term hours subtotal: 16

---

**Term 8 106 - 120 Credit Hours**  

**Upper Division Distribution Course**  
4  C

**Upper Division Language and Cultures: Requirement satisfied through the following:**

* Completion of six semester hours of upper-division courses that have a Global Awareness (G) or Cultural Diversity (C) designation, in addition to the courses used to meet the University General Studies requirements or four (4) sequential semesters of one foreign language or two (2) semesters of a current computer language. Adjustment to upper division hours is required if lower division courses are used.

**Upper Division Elective OR LSC 484: Internship**  
3

Term hours subtotal: 14

---

- Students must select a minimum of one lecture or lecture/lab combined course from each one of the three distribution areas: 1. Cellular, Molecular and Physiological Biology, 2. Integrative Systems Ecology, 3. Organismal Biology.

---

**Hide Course List(s)/Track Group(s)**

**Cellular, Molecular and Physiological Biology Distribution Course List**

- BCH 371: Modern Concepts in Biochemistry
- BCH 372: Modern Concepts in Biochemistry Laboratory
- BIO 431: Genes, Development, and Evolution (L)
- BIO 443: Applied Molecular Genetics and Genomics AND LSC 447: Molecular Genetics Laboratory
- PTX 301: Basics of Pharmacology and Toxicology
- PTX 432: Fundamentals of Pharmacology or LSC 432: Fundamentals of Pharmacology

**Integrative Systems Ecology Distribution Course List**

- BIO 345: Evolution
- BIO 422: Ecosystem Ecology
- ENV 410: Soil Science
- LSC 362: The Human Environment
- PLB 300: Plant Diversity and Evolution (L or SG)

**Organismal Biology Distribution Course List**

- BIO 331: Animal Behavior
- BIO 360: Animal Physiology AND LSC 359: Animal Physiology Laboratory
- BIO 370: Vertebrate Zoology
- BIO 385: Comparative Invertebrate Zoology
- BIO 474: Herpetology
- MIC 443: The Microbial Universe AND MIC 444: The Microbial Universe Laboratory
- PLB 302: Plants and Civilization
- PLB 308: Plant Physiology
- PLB 310: The Flora of Arizona
Upper Division Related Area Electives

- **BIO Elective**
- **ENV Elective**
- **FOR Elective**
- **LSC Elective**
- **MIC Elective**
- **PLB Elective**
- **PTX Elective**

---

Total Hours: 120

Upper Division Hours: 45 minimum

Major GPA: 2.00 minimum

Cumulative GPA: 2.00 minimum

Total hrs at ASU: 30 minimum

Hrs Resident Credit for Academic Recognition: 56 minimum

Total Community College Hrs: 64 maximum

Total College Residency Hrs: 12 minimum

---

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)
- Natural Science - General (SG)

General Studies Awareness Requirements:

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

First-Year Composition

General Studies designations listed next to courses on the major map were valid for the 2018 - 2019 academic year. Please refer to the course catalog for current General Studies designations at time of class registration. General Studies credit is applied according to the designation the course carries at the time the class is taken.