











2018 - 2019 Major Map

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

School/College: The College of Liberal Arts and Sciences
LABSCCBS

Term 1 0 - 15 Credit Hours Critical course signified by 	Hours	Minimum Grade	Notes
 LIA 101: Student Success in the College of Liberal Arts and Sciences	1		<ul style="list-style-type: none"> 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		
Term 2 15 - 30 Credit Hours Critical course signified by 	Hours	Minimum Grade	Notes
BIO 282: Conceptual Approaches to Biology for Majors II	4	C	<ul style="list-style-type: none"> 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		
Term 3 30 - 45 Credit Hours Critical course signified by 	Hours	Minimum Grade	Notes
BIO 320: Fundamentals of Ecology	3	C	<ul style="list-style-type: none"> 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		
Term 4 45 - 61 Credit Hours Critical course signified by 	Hours	Minimum Grade	Notes
 BIO 340: General Genetics	4	C	

Humanities, Arts and Design (HU) AND Global Awareness (G)	3
Social-Behavioral Sciences (SB)	3
Complete 2 courses:	6
Elective	
Term hours subtotal:	16

- Explore or pursue [internship opportunities](#)
- 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 ★	Hours	Minimum Grade	Notes
★ BIO 322: Conservation of Biodiversity	3	C	<ul style="list-style-type: none"> • 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
★ Upper Division Human Dimensions of Conservation and Ecology	3	C	
BIO 345: Organic Evolution	3	C	
Social-Behavioral Sciences (SB) AND Cultural Diversity in the U.S. (C)	3		
Elective	3		
Term hours subtotal:	15		

Term 6 76 - 91 Credit Hours Necessary course signified by ★	Hours	Minimum Grade	Notes
★ Upper Division Conservation Biology and Ecology Field Methods	3	C	<ul style="list-style-type: none"> • 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
Upper Division CLAS Science and Society Elective	3	C	
Upper Division Social-Behavioral Sciences (SB) OR Upper Division Humanities, Arts and Design (HU)	3		
Upper Division Elective	3		
Elective	3		
★ Complete Cultural Diversity in the U.S. (C) AND Global Awareness (G) AND Historical Awareness (H) course(s).			
Term hours subtotal:	15		

Term 7 91 - 106 Credit Hours Necessary course signified by ★	Hours	Minimum Grade	Notes
★ Upper Division Advanced Ecology	3	C	<ul style="list-style-type: none"> • 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
Quantitative & Spatial Analysis Course	3	C	
Upper Division Literacy and Critical Inquiry (L)	3		
Upper Division Elective	3		
Elective	3		
Term hours subtotal:	15		

Term 8 106 - 120 Credit Hours Necessary course signified by ★	Hours	Minimum Grade	Notes
★ Upper Division Advanced Ecology, Biodiversity, Field or Research Course	3	C	<ul style="list-style-type: none"> • Students must complete BIO 421 or BIO 422 or BIO 423 no later than the eighth term
★ Upper Division Advanced Human Dimensions of Conservation and Ecology	3	C	

Upper Division Elective	2
Elective OR BIO 484: Internship OR MIC 484: Internship OR MBB 484: Internship	3
Elective	3
Term hours subtotal:	14

- Continue to apply for full-time career opportunities or graduate school

- 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.

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

Human Dimensions of Conservation and Ecology	Conservation Biology and Ecology Field Methods	Physical Science Requirement Courses
BIO 304: Plants and Civilization	BIO 410: Techniques in Conservation Biology and Ecology (L)	CHM 231: Elementary Organic Chemistry (SQ) AND CHM 235: Elementary Organic Chemistry Laboratory (SQ)
BIO 324: Environmental Ethics (HU)	BIO 494: Discovering Biodiversity	GIS 205: Geographic Information Science I (CS)
BIO 412: Conservation in Practice	BIO 494: Novel Ecosystems	GIS 211: Geographic Information Science II (CS)
BIO 427: Fire (H)	BIO 498: Sonoran Desert Field Botany	GLG 101: Introduction to Geology I (Physical) (SQ) AND GLG 103: Introduction to Geology I-Laboratory (SQ)
BIO 434: People and Nature: Ecosystem Services		GPH 111: Introduction to Physical Geography (SQ)
BIO 495: Undergraduate Research		PHY 101: Introduction to Physics (SQ) or PHY 111: General Physics (SQ) AND PHY 113: General Physics Laboratory (SQ)
Quantitative & Spatial Analysis Courses	Advanced Ecology	Advanced Human Dimensions of Conservation and Ecology
BIO 411: Quantitative Methods in Conservation and Ecology	ABS 472: Applied Herpetology	BIO 304: Plants and Civilization
BIO 415: Biometry (CS)	BIO 360: Animal Physiology	BIO 324: Environmental Ethics (HU)
CSE 100: Principles of Programming with C++ (CS)	BIO 361: Animal Physiology Laboratory	BIO 434: People and Nature: Ecosystem Services
CSE 110: Principles of Programming (CS)	BIO 421: Landscape Ecology	JUS 444: Environment and Justice (L & C)
GIS 311: Geographic Information Science III (CS)	BIO 422: Ecosystem Ecology	SOS 310: Equity, Justice and Sustainability
GIS 470: Advanced Statistics for Geography and Planning (CS)	BIO 423: Population and Community Ecology	SOS 321: Policy and Governance in Sustainable Systems
GIS 471: Spatial Statistics for Geography and Planning	BIO 429: Human Impacts on Ecosystem Functioning	SOS 325: The Economics of Sustainability
SOS 212: Calculus-Based Modeling for the Life and Social Sciences	BIO 461: Comparative Animal Physiology	
	BIO 471: Ornithology	
	BIO 495: Undergraduate Research	
Advanced Ecology, Biodiversity, Field or Research Course		

ABS 376: Wildlife Ecology

ABS 380: Restoration and Wildlife Plants

ABS 470: Life History of Mammals

ABS 476: Big Game Habitat Management

ABS 481: Riparian and Wetland Restoration

ASM 443: Primatology

BIO 303: Plant Diversity and Evolution (L or SG)

BIO 313: The Flora of Arizona

BIO 325: Oceanography

BIO 331: Animal Behavior

BIO 370: Vertebrate Zoology

BIO 385: Comparative Invertebrate Zoology

BIO 386: General Entomology

BIO 410: Techniques in Conservation Biology and Ecology (L)

BIO 419: Physiological Plant Ecology

BIO 424: Dynamic Modeling in Social and Ecological Systems

BIO 498: Sonoran Desert Field Botany

GPH 422: Plant Geography or BIO 430: Plant Geography

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.

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.