

## 2024 - 2025 Major Map

### Environmental Science, BS

School/College: New College of Interdisciplinary Arts and Sciences  
ASENVBS

Term 1 0 - 15 Credit Hours Critical course signified by ⚠	Hours	Minimum Grade	Notes
⚠ BIO 181: General Biology I (SCIT OR SQ)	4	C	<ul style="list-style-type: none"> <li>Students considering research or graduate/medical/professional school may consider the MAT 270 and MAT 271 calculus sequence as an alternative (this may require more than 120 credits to complete degree).</li> <li>MAT 270 is necessary for students intending on taking Data/Modeling Track focus courses.</li> <li>ASU 101 or college-specific First-Year Seminar is required of all first-year students. NEW 101 satisfies this requirement.</li> <li>IAS 300 (three credit hours) is required for all transfer students in New College.</li> <li>Select your <b>Career Interest Community</b> and play <b>me3@ASU</b>.</li> <li>Activate your <b>Handshake</b> account and build out your profile.</li> </ul>
⚠ CHM 113: General Chemistry I (SCIT OR 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 210: Brief Calculus (MATH OR MA) OR MAT 251: Calculus for Life Sciences (MATH OR MA) OR MAT 270: Calculus with Analytic Geometry I (MATH OR MA)	3-4	C	
NEW 101: The ASU New College Experience OR IAS 300: Career Strategies and Personal Resilience (L or SB)	1-3		
Term hours subtotal:	15-18		

Term 2 15 - 30 Credit Hours Critical course signified by ⚠	Hours	Minimum Grade	Notes
⚠ BIO 182: General Biology II (SCIT OR SG)	4	C	<ul style="list-style-type: none"> <li>Either STP 226 or STP 280 is acceptable to meet the requirement. STP 280 is necessary for students intending to take Data/Modeling Track focus courses.</li> <li>Create a first draft <b>resume</b>.</li> <li>Join a <b>student club</b> or professional organization.</li> <li>Secure a <b>part-time job</b> or <b>volunteer experience</b>.</li> </ul>
⚠ CHM 116: General Chemistry II (SCIT OR 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 226: Elements of Statistics (QTRS OR CS) OR STP 280: Probability and Statistics for Researchers (QTRS OR CS)	3	C	
Elective	1		
⚠ Complete ENG 101 OR ENG 105 OR ENG 107 course(s).			
Term hours subtotal:	15		

Term 3 30 - 44 Credit Hours Critical course signified by ⚠	Hours	Minimum Grade	Notes
⚠ ENV 201: Fundamentals of Environmental Science (SUST)	3	C	<ul style="list-style-type: none"> <li>One semester of organic chemistry lecture &amp; lab is required, either CHM 231 &amp; 235 or CHM 233 &amp; 237. CHM 233 &amp; 237 should be taken by students intending to take electives from the Chemistry/Toxicology Track, as they are prerequisites required for many courses in that focus area.</li> </ul>
CHM 231: Elementary Organic Chemistry (SCIT OR SQ) AND CHM 235: Elementary Organic Chemistry Laboratory (SCIT OR SQ) OR CHM 233: General Organic Chemistry I AND CHM 237: General Organic Chemistry Laboratory I	4	C	
PHY 101: Introduction to Physics (SCIT OR SQ) OR PHY 111: General Physics (SCIT OR SQ) AND PHY 113: General Physics Laboratory (SCIT OR SQ)	4	C	

Humanities, Arts and Design (HUAD)	3
❖ Complete First-Year Composition requirement.	
Complete Mathematics (MATH) requirement.	
Term hours subtotal:	14

- Develop your **research skills**.
- Develop your **professional skills**.
- Interested in pre-professional pathways?  
Explore our **pre-health** and **pre-law** websites.

Term 4 44 - 58 Credit Hours <b>Critical course signified by</b> ❖	Hours	Minimum Grade	Notes
GLG 108: Water Planet (SCIT OR SQ) OR GLG 101: ❖ Introduction to Geology I (Physical) (SCIT OR SQ) AND ENV 103: Introduction to Geology I: Laboratory (SCIT OR SQ)	4	C	<ul style="list-style-type: none"> <li>• The program electives are grouped by track focus areas. Students can take electives from any of the track focus areas. Some students may choose to specialize in a particular area, and therefore take all of their electives from within one group. Other students may choose a broad approach and take electives from each group.</li> <li>• Students must complete a total of at least 11 hours of track focus elective courses.</li> <li>• Explore an <b>internship</b>, an <b>IGLE international experience</b>, or <b>ASU Study Abroad</b>.</li> </ul>
Track Focus Elective Course	4	C	
Humanities, Arts and Design (HUAD)	3		
Social and Behavioral Sciences (SOBE)	3		
Term hours subtotal:	14		

Term 5 58 - 73 Credit Hours <b>Necessary course signified by</b> ★	Hours	Minimum Grade	Notes
★ CHM 302: Environmental Chemistry	3	C	<ul style="list-style-type: none"> <li>• Thinking about graduate school? Consider registering for a grad school <b>test prep course</b> and explore <b>accelerated master's degrees</b>.</li> <li>• Develop your <b>professional online presence</b>.</li> </ul>
BIO 353: Cell Biology OR LSC 347: Fundamentals of Genetics	3	C	
IAS 407: Environmental Philosophy and Policy (L or HU) or PHI 407: Environmental Philosophy and Policy (L or HU) OR IAS 409: Eco-Community Ethics (HU) or PHI 409: Eco-Community Ethics (HU)	3	C	
Upper Division Global and Civic Engagement Requirement: satisfied through completion of 6 credits of upper-division courses with a Global Communities, Societies and Individuals (GCSI) or Governance and Civic Engagement (CIVI) designation, in addition to the courses used to meet the university General Studies requirements; or completion of 3 credits from an ASU-approved Global Education program. Adjustment to upper-division and elective hours is required if a lower-division Global Education course is used.	3	C	
Elective	3		
Term hours subtotal:	15		

Term 6 73 - 87 Credit Hours <b>Necessary course signified by</b> ★	Hours	Minimum Grade	Notes
★ BIO 320: Fundamentals of Ecology AND LSC 322: Fundamentals of Ecology Laboratory	4	C	<ul style="list-style-type: none"> <li>• The electives listed at the bottom of the major map are grouped by focus areas. Students can take electives from any of the focus areas. Some students may choose to specialize in a particular area, and therefore take all of their electives from within one group. Other students may choose a broad approach and take electives from each group.</li> <li>• Up to six credit hours (two completions) of 499 Individualized Instruction can be used towards Capstone and/or Track Focus Electives. However, to be applied, each completion of 499 must be a unique experience with a different instructor.</li> </ul>
★ ENV 345: Spatial Analysis in the Environmental Sciences	3	C	
PLB 300: Plant Diversity and Evolution (L or SG) OR PLB 302: Plants and Civilization OR PLB 388: Special Topics OR PLB 412: Carbon, Climate and Photosynthesis or ENV 412: Carbon, Climate and Photosynthesis OR PLB Upper Division Elective	3	C	
Track Focus Elective Course	4-3	C	
Term hours subtotal:	14-13		

- Use Handshake to research **employment opportunities**.
- Complete an in person or virtual **practice interview**.

Term 7 87 - 104 Credit Hours <b>Necessary course signified by</b> ★	Hours	Minimum Grade	Notes
★ ENV 410: Soil Science	4	C	<ul style="list-style-type: none"> <li>• Up to six credit hours (two completions) of 499 Individualized Instruction can be used towards Capstone and/or Track Focus Electives. However, to be applied, each completion of 499 must be a unique experience with a different instructor.</li> <li>• Gather <b>professional references</b>.</li> </ul>
Upper Division Environmental Science Capstone	3	C	
Upper Division Field Intensive Course	4	C	
Upper Division Global and Civic Engagement Requirement: satisfied through completion of 6 credits of upper-division courses with a Global Communities, Societies and Individuals (GCSI) or Governance and Civic Engagement (CIVI) designation, in addition to the courses used to meet the university General Studies requirements; or completion of 3 credits from an ASU-approved Global Education program. Adjustment to upper-division and elective hours is required if a lower-division Global Education course is used.	3	C	
Global Communities, Societies and Individuals (GCSI)	3		
Term hours subtotal:	17		

Term 8 104 - 120 Credit Hours <b>Necessary course signified by</b> ★	Hours	Minimum Grade	Notes
★ BIO 422: Ecosystem Ecology	3	C	<ul style="list-style-type: none"> <li>• The electives listed at the bottom of the major map are grouped by focus areas. Students can take electives from any of the focus areas. Some students may choose to specialize in a particular area, and therefore take all of their electives from within one group. Other students may choose a broad approach and take electives from each group.</li> <li>• Up to six credit hours (two completions) of 499 Individualized Instruction can be used towards Capstone and/or Track Focus Electives. However, to be applied, each completion of 499 must be a unique experience with a different instructor.</li> <li>• Apply for <b>full-time career opportunities</b>.</li> </ul>
★ ENV 485: Environmental Impact Assessment (CIVI OR L)	3	C	
BIO 370: Vertebrate Zoology OR BIO 385: Comparative Invertebrate Zoology	4	C	
Track Focus Elective Course	3-4	C	
American Institutions (AMIT)	3		
Term hours subtotal:	16-17		

- Environmental Science Track Focus Areas: Electives listed below are grouped by focus areas. Students can complete electives from any of the focus areas. Some students may choose to specialize in a particular area, and therefore take all of their electives from within one group. Other students may choose a broad approach and take electives from each group. Courses taken to fulfill core requirements cannot also be used to fulfill track focus electives.
- Up to six credit hours (two completions) of 499 Individualized Instruction can be used towards Capstone and/or Environmental Science Track Focus Electives. However, to be applied, each completion of 499 must be a unique experience with a different instructor.

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

Field Intensive Course	Business/Leadership Track	Chemistry/Toxicology Track
BIO 474: Herpetology	COM 415: Risk Communication	BCH 371: Modern Concepts in Biochemistry AND BCH 372: Modern Concepts in Biochemistry Laboratory

ENV 415: Field Techniques in Natural Resource Management	COM 430: Leadership in Group Communication	BIO 353: Cell Biology
PLB 310: The Flora of Arizona	ERM 502: Regulatory Framework for Toxic and Hazardous Substances	BIO 443: Applied Molecular Genetics and Genomics
	ERM 527: Environmental/Resources Regulations Concepts	CHM 234: General Organic Chemistry II AND CHM 238: General Organic Chemistry Laboratory II
	ERM 535: Water Law and Policy	CHM 303: Environmental Chemistry Laboratory (L)
	OGL 200: Introduction to Organizational Leadership (CIVI OR SB)	ERM 522: Air Pollution and Toxic Chemicals
	OGL 300: Theory and Practice of Leadership	ERM 523: Soils and Groundwater Contamination
	OGL 355: Leading Organizational Innovation and Change	ERM 541: Environmental Health
	PMG 240: Introduction to Project Management	LSC 347: Fundamentals of Genetics
	SOS 230: Professional Skills in Sustainability	FOR 425: Analytical Chemistry for Life Sciences
	SOS 311: Future Thinking and Strategies	FOR 426: Analytical Chemistry for Life Sciences Lab
	SOS 385: Business and Sustainability I (SUST)	LSC 475: Principles of Toxicology
<b>Data/Modeling Track</b>	<b>Ecosystem/Global Change Track</b>	<b>Organismal/Conservation Biology Track</b>
MAT 271: Calculus with Analytic Geometry II (MATH OR MA)	BIO 323: Ecosystem Restoration and Management	BIO 345: Evolution
MAT 275: Modern Differential Equations (MATH OR MA)	BIO 412: Conservation in Practice	BIO 360: Animal Physiology
MAT 343: Applied Linear Algebra	BIO 415: Statistical Models for Biology (QTRS OR CS)	BIO 370: Vertebrate Zoology
MAT 450: Mathematical Models in Biology or MAT 451: Mathematical Modeling (CS)	BIO 421: Landscape Ecology	BIO 385: Comparative Invertebrate Zoology
STP 281: Statistical Analysis for Researchers	BIO 426: Limnology (L)	BIO 410: Techniques in Conservation Biology and Ecology
STP 310: Design and Analysis of Experiments	ENV 388: STEM Research Fundamentals or LSC 388: STEM Research Fundamentals or PLB 388: STEM Research Fundamentals	BIO 431: Genes, Development, and Evolution (L)
STP 311: Regression and Time Series Analyses	GLG 325: Oceanography	BIO 474: Herpetology
STP 315: Statistical Computing	GLG 327: Earth's Critical Zone	ENV 300: Plant Diversity and Evolution (L or SG) or PLB 300: Plant Diversity and Evolution (L or SG)
STP 450: Nonparametric Statistics	ENV 412: Carbon, Climate and Photosynthesis or PLB 412: Carbon, Climate and Photosynthesis	ENV 302: Plants and Civilization or PLB 302: Plants and Civilization
STP 460: Categorical Data Analysis	ERM 520: Sustainability and Sustainable Development	ENV 394: Animal Behavior in a Changing Environment or LSC 394: Animal Behavior in a Changing Environment
STP 499: Individualized Instruction	LSC 362: The Human Environment	ENV 394: Special Topics
	LSC 434: Marine Ecology	ENV 494: Special Topics
	MIC 443: The Microbial Universe AND MIC 444: The Microbial Universe Laboratory	ENV 415: Field Techniques in Natural Resource Management
	SOS 110: Sustainable World (SUST OR SB)	PLB 308: Plant Physiology
		PLB 310: The Flora of Arizona
		PLB 394: Special Topics

Upper Division Environmental Science  
Capstone

BIO 495: Undergraduate Research

BIO 499: Individualized Instruction

ENV 484: Internship

ENV 492: Honors Directed Study

ENV 493: Honors Thesis (L)

ENV 499: Individualized Instruction

LSC 484: Internship

LSC 492: Honors Directed Study

LSC 493: Honors Thesis (L)

LSC 499: Individualized Instruction

PLB 499: Individualized Instruction

- **Total Hours:** 120
- **Upper Division Hours:** 45 minimum
- **University Undergraduate Graduation Requirements**

**Notes:**

Mathematics Placement Assessment score determines placement in first mathematics course.

General Studies designations listed next to courses on the major map were valid for the 2024 - 2025 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.