2024 - 2025 Major Map

Earth and Environmental Sciences, BS

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

Term 1 - A 0 - 7 Credit Hours Critical course signified by	Hours	Minimum Grade	Notes
Mathematics (MATH)	3	C	• ASU 101 or college specific equivalent First-Year Seminar is required for all first-year students. • Students who place into MAT 251 or MAT 265 should take that course in Term 1A to complete the Mathematics (MATH) requirement. • If students don't place into MAT 251 or MAT 265, they should enroll in the appropriate math prerequisite in Term 1A.
ASU 101-LA: The ASU Experience	1		
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	
Term hours subtotal:	7		

Term 1 - B 7 - 14 Credit Hours Critical course signified by	Hours	Minimum Grade	Notes
GLG 110: Dangerous World (SCIT OR SQ & G) AND GLG 111: Dangerous World Laboratory (SCIT OR SQ)	4	C	• View ASU Online first-year student registration information here.
Governance and Civic Engagement (CIVI)	3		
Term hours subtotal:	7		

Term 2 - A 14 - 20 Credit Hours Critical course signified by	Hours	Minimum Grade	Notes
MAT 251: Calculus for Life Sciences (MATH OR MA) OR MAT 265: Calculus for Engineers I (MATH OR MA)	3-4	C	• Select your career interest areas and play me3@ASU.
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	
Term hours subtotal:	6-7		

Term 2 - B 20 - 28 Credit Hours Critical course signified by	Hours	Minimum Grade	Notes
GLG 108: Water Planet (SCIT OR SQ)	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	
Complete ENG 101 OR ENG 105 OR ENG 107 course(s).			
Milestone: Complete SESE Faculty Mentoring.			
Term hours subtotal:	8		

Term 3 - A 28 - 35 Credit Hours Critical course signified by	Hours	Minimum Grade	Notes
CHM 113: General Chemistry I (SCIT OR SQ)	4	C	• Review the Career Guide for ASU Online Students to learn about available career planning resources.
SES 220: Biology of a Changing Earth	3	C	
Term hours subtotal:	7		

Term 3 - B 35 - 44 Credit Hours Critical course signified by	Hours	Minimum Grade	Notes
STP 231: Statistics for Life Science (QTRS OR CS) OR GIS 270: Statistics for Geography and Planning	3	C	• If students choose to take STP 231 for their statistics requirement, they will not need an additional Quantitative Reasoning (QTRS) course. Students can take an elective instead.
Science and Society Elective	3	C	
Quantitative Reasoning (QTRS)	3		
Complete First-Year Composition requirement.			
Complete Mathematics (MATH) requirement.			
Term hours subtotal:	9		

Term 4 - A 44 - 51 Credit Hours Critical course signified by	Hours	Minimum Grade	Notes
CHM 116: General Chemistry II (SCIT OR SQ)	4	C	• Register for a Handshake account and participate in virtual career advising.
Sustainability (SUST)	3		
Term hours subtotal:	7		

Term 4 - B 51 - 60 Credit Hours	Hours	Minimum Grade	Notes
SES 225: Global Biogeochemical Cycles	3	C	
Global Communities, Societies and Individuals (GCSI)	3		
Social and Behavioral Sciences (SOBE)	3		
Milestone: Complete SESE Faculty Mentoring.			
Term hours subtotal:	9		

Term 5 - A 60 - 69 Credit Hours Necessary course signified by	Hours	Minimum Grade	Notes
CHM 231: Elementary Organic Chemistry (SCIT OR SQ) OR CHM 233: General Organic Chemistry I	3	C	• Develop your professional online presence.
GLG 325: Oceanography	3	C	
Upper Division Science and Society Elective	3	C	
Term hours subtotal:	9		

Term 5 - B 69 - 75 Credit Hours	Hours	Minimum Grade	Notes
Humanities, Arts and Design (HUAD)	3		
Elective	3		
Term hours subtotal:	6		

Term 6 - A 75 - 84 Credit Hours Necessary course signified by	Hours	Minimum Grade	Notes
GLG 305: Dynamic Earth	3	C	• Use Handshake to research employment opportunities. • The list of approved major track electives along with their prerequisites may be viewed on the SESE website.
ERM 406: Environmental Chemistry	3	C	
Upper Division Earth and Environmental Sciences (EES) Major Track Electives	3	C	
Term hours subtotal:	9		

Term 6 - B 84 - 90 Credit Hours	Hours	Minimum Grade	Notes
Upper Division Earth and Environmental Sciences (EES) Major Track Electives	3	C	• The list of approved major track electives along with their prerequisites may be viewed on the SESE website.
Upper Division Elective	3		
Term hours subtotal:	6		

Term 7 - A 90 - 99 Credit Hours Necessary course signified by	Hours	Minimum Grade	Notes

★ GLG 327: Earth's Critical Zone	3	C	• Apply for full-time career opportunities. • The list of approved major track electives along with their prerequisites may be viewed on the SESE website.
4** (400-level) Earth and Environmental Sciences (EES) Major Track Electives	3	C	
Upper Division Elective	3		
Term hours subtotal:	9		

Term 7 - B 99 - 105 Credit Hours	Hours	Minimum Grade	Notes
4** (400-level) Earth and Environmental Sciences (EES) Major Track Electives	3	C	• The list of approved major track electives along with their prerequisites may be viewed on the SESE website.
Humanities, Arts and Design (HUAD)	3		
Term hours subtotal:	6		

Term 8 - A 105 - 111 Credit Hours Necessary course signified by ★	Hours	Minimum Grade	Notes
★ GLG 464: Solving Environmental Problems	3	C	• GLG 464 is a session C course (15 weeks long).
Upper Division Elective	3		
Term hours subtotal:	6		

Term 8 - B 111 - 120 Credit Hours	Hours	Minimum Grade	Notes
American Institutions (AMIT)	3		
Complete 2 courses: Upper Division Elective	6		
Term hours subtotal:	9		

- All students pursuing a BS or BSP degree in The College of Liberal Arts and Sciences must complete two courses from the Science and Society list found at https://thecollege.asu.edu/student-resources/science-society. At least one of the two courses must be upper division and students must earn a C or better in the courses. Both Science and Society courses (i.e., all six credits) may count towards any major, minor, related fields, and ASU General Studies requirements.
- For the Earth and Environmental Studies Track Electives, students are encouraged to choose a track but they also have the option to choose any combination of courses across multiple tracks. Regardless of the chosen track, at least two of the Earth and Environmental Studies Track Electives must be 400-level.
- Each of the focused tracks has overlap with a related certificate program that students can choose to pursue along with the chosen track. Students should discuss this option and how to add a certificate with their academic advisor.
- Students interested in further study in the field of sustainability are encouraged to speak with their academic advisor and contact the College of Global Futures about additional program opportunities.

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

Earth and Environmental Sciences General Elective Track	Climate/Environmental Change Track	Earth Resources Track
This track includes all of the courses in the following tracks: 1) Climate/Environmental Change, 2) Earth Resources, 3) Environmental Education, 4) Environmental Management, 5) Environmental Policy and 6) Sustainability. While students are encouraged to pick a focused track, students may choose not to focus on one of the above tracks and may select courses across	ABS 350: Applied Statistics (QTRS OR CS)	ABS 350: Applied Statistics (QTRS OR CS)
	GIS 470: Advanced Statistics for Geography and Planning (QTRS OR CS)	GIS 311: Geographic Information Science III (QTRS OR CS)
	GPH 314: Global Change (SUST OR HU & G)	GIS 322: Programming Principles in GIS II
	GPH 414: Climate Change (SUST OR G)	GIS 341: Cartography and Georepresentation (QTRS OR CS)
	PUP 442: Environmental Planning	

multiple tracks. Of the four major elective courses required, at least two of the courses must be 400-level.

SOS 314: Basic Energy Science

SOS 320: Society and Sustainability (SOBE OR L or SB)

SOS 324: Sustainable Energy Technology and Systems

SOS 326: Sustainable Ecosystems

STP 420: Introductory Applied Statistics (QTRS OR CS)

GIS 470: Advanced Statistics for Geography and Planning (QTRS OR CS)

GPH 314: Global Change (SUST OR HU & G)

GPH 381: Geography of Natural Resources (SUST OR G)

GPH 414: Climate Change (SUST OR G)

PUP 442: Environmental Planning

SOS 320: Society and Sustainability (SOBE OR L or SB)

SOS 324: Sustainable Energy Technology and Systems

SOS 325: The Economics of Sustainability

STP 420: Introductory Applied Statistics (QTRS OR CS)

Environmental Education Track

ABS 302: Ethical and Policy Issues in Biology

BIO 324: Environmental Ethics (SUST OR HU) or PHI 310: Environmental Ethics (SUST OR HU)

GIS 470: Advanced Statistics for Geography and Planning (QTRS OR CS)

GPH 314: Global Change (SUST OR HU & G)

GPH 381: Geography of Natural Resources (SUST OR G)

GPH 414: Climate Change (SUST OR G)

PUP 442: Environmental Planning

SCN 300: Foundations of Environmental Education

SCN 310: Biodiversity Conservation: An Educational Inquiry

SCN 401: Sustainability Science, Technology, and Society

STP 420: Introductory Applied Statistics (QTRS OR CS)

Environmental Management Track

ABS 350: Applied Statistics (QTRS OR CS)

BIO 324: Environmental Ethics (SUST OR HU) or PHI 310: Environmental Ethics (SUST OR HU)

GIS 311: Geographic Information Science III (QTRS OR CS)

GIS 322: Programming Principles in GIS II

GIS 341: Cartography and Georepresentation (QTRS OR CS)

GIS 470: Advanced Statistics for Geography and Planning (QTRS OR CS)

GPH 314: Global Change (SUST OR HU & G)

GPH 381: Geography of Natural Resources (SUST OR G)

GPH 414: Climate Change (SUST OR G)

PUP 301: Introduction to Urban Planning (L)

PUP 442: Environmental Planning

STP 420: Introductory Applied Statistics (QTRS OR CS)

Environmental Policy Track

ABS 302: Ethical and Policy Issues in Biology

ABS 350: Applied Statistics (QTRS OR CS)

BIO 324: Environmental Ethics (SUST OR HU) or PHI 310: Environmental Ethics (SUST OR HU)

GIS 470: Advanced Statistics for Geography and Planning (QTRS OR CS)

GPH 314: Global Change (SUST OR HU & G)

GPH 414: Climate Change (SUST OR G)

PUP 442: Environmental Planning

SOS 315: Energy Policy

SOS 320: Society and Sustainability (SOBE OR L or SB)

SOS 321: Policy and Governance in Sustainable Systems

SOS 323: Sustainable Urban Dynamics

SOS 324: Sustainable Energy Technology and Systems

STP 420: Introductory Applied Statistics (QTRS OR CS)

Sustainability Track

ABS 350: Applied Statistics (QTRS OR CS)

GIS 470: Advanced Statistics for Geography and Planning (QTRS OR CS)

GPH 314: Global Change (SUST OR HU & G)

GPH 414: Climate Change (SUST OR G)

PUP 442: Environmental Planning

SCN 401: Sustainability Science, Technology, and Society

SOS 300: Advanced Concepts and Integrated Approaches in Sustainability

SOS 310: Equity, Justice and Sustainability

SOS 314: Basic Energy Science

SOS 315: Energy Policy

SOS 320: Society and Sustainability (SOBE OR L or SB)

SOS 321: Policy and Governance in Sustainable Systems

SOS 323: Sustainable Urban Dynamics

SOS 324: Sustainable Energy Technology and Systems

SOS 325: The Economics of Sustainability

SOS 326: Sustainable Ecosystems

SOS 327: Sustainable Food & Farms

STP 420: Introductory Applied Statistics (QTRS OR CS)

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

Notes:
Mathematics Placement Assessment score determines placement in first mathematics course.
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 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.