

## 2017 - 2018 Major Map

### Earth and Environmental Sciences, BA

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

This program's name has changed effective Fall 2024. The previous name was Earth and Environmental Studies.

Term 1 0 - 14 Credit Hours Critical course signified by !	Hours	Minimum Grade	Notes
! GLG 101: Introduction to Geology I (Physical) (SQ) AND GLG 103: Introduction to Geology I-Laboratory (SQ)	4	C	<ul style="list-style-type: none"> <li>An SAT, ACT, Accuplacer, IELTS, or TOEFL score determines placement into first-year composition courses</li> <li>ASU Mathematics Placement Test score determines placement in mathematics course</li> <li>ASU 101 or college-specific equivalent First-Year Seminar required of all freshman students. SES 191 satisfies this requirement.</li> <li>SESE requires freshman and sophomores to seek faculty mentoring at least once during the academic year. Faculty mentoring will be offered in both the fall and spring semesters. Mentoring will occur in group sessions as well as individual sessions as needed. See your SESE advisor for more details.</li> <li>Select your <b>career interest area</b> and play <b>me3@ASU</b>.</li> </ul>
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 170: Precalculus (MA)	3	C	
SES 191: Exploring SESE	1		
Social-Behavioral Sciences (SB) AND Global Awareness (G)	3		
Term hours subtotal:	14		
Term 2 14 - 29 Credit Hours Critical course signified by !	Hours	Minimum Grade	Notes
! Approved BIO or PHY Course	4	C	<ul style="list-style-type: none"> <li><b>ASU Language Placement:</b> Only true beginners are eligible for 101-level courses. All other students are required to take a placement exam, regardless of prior credit earned.</li> <li>SESE requires freshman and sophomores to seek faculty mentoring at least once during the academic year. Faculty mentoring will be offered in both the fall and spring semesters. Mentoring will occur in group sessions as well as individual sessions as needed. See your SESE advisor for more details.</li> <li>Join a <b>student club</b> or professional organization</li> </ul>
SES 106: Habitable Worlds (SQ) OR GLG 108: Water Planet (SQ) OR GLG 102: Introduction to Geology II (Historical) (SG & H)			
! AND GLG 104: Introduction to Geology II-Laboratory (SG) OR GLG 110: Dangerous World (SG & G) AND GLG 111: Dangerous World Laboratory (SG)	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	
Second Language: Requirement satisfied through the following: * Completion of a language course at the intermediate level (202 or equivalent), including American Sign Language IV.	4	C	
! Complete ENG 101 OR ENG 105 OR ENG 107 course(s).			
! Milestone: Attend SESE faculty mentoring session.			
Term hours subtotal:	15		
Term 3 29 - 46 Credit Hours Critical course signified by !	Hours	Minimum Grade	Notes

CHM 101: Introductory Chemistry (SQ) OR CHM 113: General Chemistry I (SQ) OR CHM 114: General Chemistry for Engineers (SQ)	4	C
Humanities, Arts and Design (HU) AND Cultural Diversity in the U.S. (C)	3	
Social-Behavioral Sciences (SB) AND Historical Awareness (H)	3	
Second Language: Requirement satisfied through the following: * Completion of a language course at the intermediate level (202 or equivalent), including American Sign Language IV.	4	C
Elective	3	
Complete Mathematics (MA) requirement.		
Complete First-Year Composition requirement.		
Term hours subtotal:	17	

- Some courses such as GLG102/104 or GLG110/111 may also fulfill awareness areas (C, G, H). If students have completed awareness areas as part of another course requirement they do not need to take them with their HU or SB general studies courses. See DARS report for confirmation if an awareness area has been fulfilled.
- SESE requires freshman and sophomores to seek faculty mentoring at least once during the academic year. Faculty mentoring will be offered in both the fall and spring semesters. Mentoring will occur in group sessions as well as individual sessions as needed. See your SESE advisor for more details.

Term 4 46 - 60 Credit Hours Critical course signified by	Hours	Minimum Grade	Notes
SES 106: Habitable Worlds (SQ) OR GLG 108: Water Planet (SQ) OR GLG 102: Introduction to Geology II (Historical) (SG & H) AND GLG 104: Introduction to Geology II-Laboratory (SG) OR GLG 110: Dangerous World (SG & G) AND GLG 111: Dangerous World Laboratory (SG)	4	C	
Computer/Statistics/Quantitative Applications (CS)	3		
Literacy and Critical Inquiry (L)	3		
Second Language: Requirement satisfied through the following: * Completion of a language course at the intermediate level (202 or equivalent), including American Sign Language IV.	4	C	
Milestone: Attend SESE faculty mentoring session.			
Term hours subtotal:	14		

- SESE requires freshman and sophomores to seek faculty mentoring at least once during the academic year. Faculty mentoring will be offered in both the fall and spring semesters. Mentoring will occur in group sessions as well as individual sessions as needed. See your SESE advisor for more details.
- Explore an **internship**

Term 5 60 - 76 Credit Hours Necessary course signified by	Hours	Minimum Grade	Notes
GLG 325: Oceanography	3	C	
Humanities, Arts and Design (HU)	3		
Second Language: Requirement satisfied through the following: * Completion of a language course at the intermediate level (202 or equivalent), including American Sign Language IV.	4	C	
Upper Division Elective	3		
Elective	3		
Term hours subtotal:	16		

Students are strongly encouraged to meet with SESE faculty advisors to discuss career options

Term 6 76 - 91 Credit Hours Necessary course signified by	Hours	Minimum Grade	Notes
GLG 305: Dynamic Earth	3	C	
Complete 2 courses: Upper Division Earth and Environmental Studies (EES) Major Electives	6	C	
Upper Division Elective	3		
Elective	3		
Complete Cultural Diversity in the U.S. (C) course(s).			
Complete Global Awareness (G) course(s).			
Complete Historical Awareness (H) course(s).			
Term hours subtotal:	15		

- Students are strongly encouraged to meet with SESE faculty advisors to discuss career options
- Research **employment opportunities**
- The list of approved major electives along with their pre-requisites may be viewed on the **SESE website**
- Students should meet with an advisor to do a graduation check

	Hours	Minimum Grade	Notes
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Term 7 91 - 106 Credit Hours Necessary course signified by ★	Hours	Grade	Notes
★ GLG 327: Earth's Critical Zone	3	C	<ul style="list-style-type: none"> <li>• If not already completed, students should meet with an advisor to do a graduation check</li> <li>• Students are strongly encouraged to meet with SESE faculty advisors to discuss career options</li> <li>• Apply for full-time career opportunities</li> <li>• The list of approved major electives along with their pre-requisites may be viewed on the <a href="#">SESE website</a></li> </ul>
Upper Division 4** (400 level) Earth and Environmental Studies (EES) Electives	3	C	
Upper Division Earth and Environmental Studies (EES) Major Electives	3	C	
Upper Division Literacy and Critical Inquiry (L)	3		
Upper Division Elective OR GLG 484: Internship	3		
Term hours subtotal:	15		

Term 8 106 - 120 Credit Hours Necessary course signified by ★	Hours	Minimum Grade	Notes
★ GLG 464: Solving Environmental Problems	3	C	<ul style="list-style-type: none"> <li>• Students are strongly encouraged to meet with SESE faculty advisors to discuss career options</li> <li>• The list of approved major electives along with their pre-requisites may be viewed on the <a href="#">SESE website</a></li> </ul>
Upper Division 4** (400 level) Earth and Environmental Studies (EES) Electives	3	C	
Upper Division Humanities, Arts and Design (HU) OR Upper Division Social-Behavioral Sciences (SB)	3		
Upper Division Elective	3		
Elective	2		
Term hours subtotal:	14		

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

Approved BIO or PHY Course	Upper Division 4** (400 level) Earth and Environmental Studies (EES) Electives	Upper Division Earth and Environmental Studies (EES) Electives
BIO 100: The Living World (SQ)	ABS 430: Watershed Management	ABS 302: Ethical and Policy Issues in Biology
BIO 182: General Biology II (SG)	ABS 440: Ecological Restoration Techniques	ABS 350: Applied Statistics (CS)
PHY 101: Introduction to Physics (SQ)	ABS 479: Ecosystem Management and Planning (L)	ABS 370: Ecology
PHY 111: General Physics (SQ) AND PHY 113: General Physics Laboratory (SQ)	ABS 485: GIS in Natural Resources	ABS 430: Watershed Management
	ABS 486: Introduction to Remote Sensing	ABS 440: Ecological Restoration Techniques
	CEE 400: Earth Systems Engineering and Management ((L or HU) & H)	ABS 479: Ecosystem Management and Planning (L)
	ERM 402: Unit Treatment Technologies	ABS 485: GIS in Natural Resources
	ERM 406: Environmental Chemistry	ABS 486: Introduction to Remote Sensing
	ERM 426: Environmental Issues	ASB 326: Human Impacts on Ancient Environments (SB & H)
	ERM 428: International Environmental Management (G)	BIO 311: Biology and Society
	GIS 470: Statistics for Geographers (CS)	BIO 324: Environmental Ethics (HU)
	GLG 424: Petrology	CEE 400: Earth Systems Engineering and Management ((L or HU) & H)
	GLG 430: Paleontology	ENG 371: Rhetoric of the Environmental Movement
	GLG 435: Sedimentology	ERM 302: Water and Wastewater Treatment Technology
	GLG 441: Ore Deposits	
	GLG 470: Hydrogeology	

GLG 481: Geochemistry	ERM 402: Unit Treatment Technologies
GPH 405: Energy and Environment	ERM 406: Environmental Chemistry
GPH 414: Climate Change (G)	ERM 426: Environmental Issues
JUS 444: Environment and Justice (L & C)	ERM 428: International Environmental Management (G)
PUP 442: Environmental Planning	GCU 364: Energy in the Global Arena (SB & G)
SOS 414: Urban and Environmental Health (SB)	GIS 341: Introduction to Cartography and Georepresentation (CS)
SOS 421: Landscape Ecology	GIS 470: Statistics for Geographers (CS)
SOS 424: Dynamic Modeling in Social and Ecological Systems	GLG 301: Earth Science in Arizona and the Southwest
SOS 429: Human Impacts on Ecosystem Functioning	GLG 304: Minerals, Energy, and Society
SOS 433: Sustainable Water Use	GLG 310: Structural Geology
SOS 434: People and Nature: Ecosystem Services	GLG 321: Mineralogy
SOS 441: Mathematical Concepts and Tools in Sustainability	GLG 424: Petrology
STP 420: Introductory Applied Statistics (CS)	GLG 430: Paleontology
	GLG 435: Sedimentology
	GLG 441: Ore Deposits
	GLG 470: Hydrogeology
	GLG 481: Geochemistry
	GPH 314: Global Change (HU & G)
	GPH 381: Geography of Natural Resources (G)
	GPH 405: Energy and Environment
	GPH 414: Climate Change (G)
	HST 405: Colonial American History to 1763 (SB & H)
	JUS 444: Environment and Justice (L & C)
	PHI 310: Environmental Ethics (HU)
	POS 300: Contemporary Global Controversies (SB & G)
	PUP 301: Introduction to Urban Planning (L)
	PUP 442: Environmental Planning
	SOS 300: Advanced Concepts and Integrated Approaches in Sustainability
	SOS 310: Equity, Justice and Sustainability
	SOS 314: Basic Energy Science
	SOS 320: Society and Sustainability (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 and Farms

SOC 331: Environmental Sociology (SB &  
G)

SOS 370: Ethics of Eating (L or SB)

SOS 372: Earth Science in Arizona and the  
Southwest

SOS 373: Minerals, Energy, and Society

SOS 375: Humans and the Environment:  
What's the Connection? ((L or SB) & G)

SOS 414: Urban and Environmental Health  
(SB)

SOS 421: Landscape Ecology

SOS 424: Dynamic Modeling in Social and  
Ecological Systems

SOS 429: Human Impacts on Ecosystem  
Functioning

SOS 433: Sustainable Water Use

SOS 434: People and Nature: Ecosystem  
Services

SOS 441: Mathematical Concepts and Tools  
in Sustainability

STP 420: Introductory Applied Statistics  
(CS)

#### 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 2017 - 2018 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.