# 2019 - 2020 Major Map

## Earth and Environmental Studies, BA

**School/College:** The College of Liberal Arts and Sciences  
**Location:** Tempe campus  
**LAEESBA**

### Term 1 - 15 Credit Hours

<table>
<thead>
<tr>
<th>Critical course signified by</th>
<th>Hours</th>
<th>Minimum Grade</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mathematics (MA)</td>
<td>3</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>ENG 101 or ENG 102: First-Year Composition OR ENG 105: Advanced First-Year Composition OR ENG 107 or ENG 108: First-Year Composition</td>
<td>3</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>SES 121: Earth, Solar System and Universe (SQ) AND SES 123: Earth, Solar System and Universe Laboratory (SQ)</td>
<td>4</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>SES 191: Exploring SESE</td>
<td>1</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>LIA 101: Student Success in the College of Liberal Arts and Sciences</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social-Behavioral Sciences (SB) AND Global Awareness (G)</td>
<td>3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Term hours subtotal:** 15

- An SAT, ACT, Accuplacer, IELTS, or TOEFL score determines placement into first-year composition courses.
- Mathematics Placement Assessment score determines placement in mathematics course.
- LIA 101 is mandatory for all incoming freshmen.
- SESE requires freshmen and sophomores to seek faculty mentoring at least once during the academic year. Each student will be assigned a SESE faculty mentor. Students can find their faculty mentor on the SESE advising website.
- Select your career interest area and play me3@ASU.

### Term 2 - 15 - 29 Credit Hours

<table>
<thead>
<tr>
<th>Critical course signified by</th>
<th>Hours</th>
<th>Minimum Grade</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAT 170: Precalculus (MA)</td>
<td>3</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>Approved BIO or PHY Course</td>
<td>4</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>ENG 101 or ENG 102: First-Year Composition OR ENG 105: Advanced First-Year Composition OR ENG 107 or ENG 108: First-Year Composition</td>
<td>3</td>
<td>C</td>
<td></td>
</tr>
</tbody>
</table>
| 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: Complete SESE faculty mentoring. | | | |

**Term hours subtotal:** 14

- ASU Language Placement: Only true beginners are eligible for 101-level courses. All other students are required to take a placement exam, regardless of prior credit earned.
- SESE requires freshmen and sophomores to seek faculty mentoring at least once during the academic year. Each student will be assigned a SESE faculty mentor. Students can find their faculty mentor on the SESE advising website.
- Join a student club or professional organization.

### Term 3 - 29 - 44 Credit Hours

<table>
<thead>
<tr>
<th>Critical course signified by</th>
<th>Hours</th>
<th>Minimum Grade</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHM 101: Introductory Chemistry (SQ) OR CHM 113: General Chemistry I (SQ) OR CHM 114: General Chemistry for Engineers (SQ)</td>
<td>4</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>Laboratory Science Major Elective</td>
<td>4</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>Social-Behavioral Sciences (SB) AND Historical Awareness (H)</td>
<td>3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| 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 First-Year Composition requirement. | | | |
| Complete Mathematics (MA) requirement. | | | |

- Some courses such as GLG 102/104 or GLG 110/111 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 freshmen and sophomores to seek faculty mentoring at least once during the academic year.
Term hours subtotal: 15

**Term 4 44 - 58 Credit Hours**

Critical course signified by ☀

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Hours</th>
<th>Minimum Grade</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laboratory Science Major Elective</td>
<td>4</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>Computer/Statistics/Quantitative Applications (CS)</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Literacy and Critical Inquiry (L)</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Second Language: Requirement satisfied through the following:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>* Completion of a language course at the intermediate level (202 or equivalent), including American Sign Language IV.</td>
<td>4</td>
<td>C</td>
<td></td>
</tr>
</tbody>
</table>

Milestone: Complete SESE faculty mentoring.

Term hours subtotal: 14

**Term 5 58 - 74 Credit Hours**

Necessary course signified by ⭐

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Hours</th>
<th>Minimum Grade</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>GLG 325: Oceanography</td>
<td>3</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>Humanities, Arts and Design (HU) AND Cultural Diversity in the U.S. (C)</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Second Language: Requirement satisfied through the following:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>* Completion of a language course at the intermediate level (202 or equivalent), including American Sign Language IV.</td>
<td>4</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>Upper Division Elective</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elective</td>
<td>3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Term hours subtotal: 16

**Term 6 74 - 89 Credit Hours**

Necessary course signified by ⭐

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Hours</th>
<th>Minimum Grade</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>GLG 305: Dynamic Earth</td>
<td>3</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>Complete 2 courses:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upper Division Earth and Environmental Studies (EES) Major Electives</td>
<td>6</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>Humanities, Arts and Design (HU)</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upper Division Elective</td>
<td>3</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>
</tr>
</tbody>
</table>

Term hours subtotal: 15

**Term 7 89 - 104 Credit Hours**

Necessary course signified by ⭐

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Hours</th>
<th>Minimum Grade</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>GLG 327: Earth's Critical Zone</td>
<td>3</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>Upper Division 4** (400 level) Earth and Environmental Studies (EES) Electives</td>
<td>3</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>Upper Division Earth and Environmental Studies (EES) Major Electives</td>
<td>3</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>Upper Division Literacy and Critical Inquiry (L)</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upper Division Elective OR GLG 484: Internship AND SES 499: Individualized Instruction</td>
<td>3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Term hours subtotal: 15

- SESE requires freshmen and sophomores to seek faculty mentoring at least once during the academic year. Each student will be assigned a SESE faculty mentor. Students can find their faculty mentor on the SESE advising website.
- Explore an internship.

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

- If not already completed, students should meet with an advisor to do a graduation check.
- Students are strongly encouraged to meet with SESE faculty advisors to discuss career options.
- Explore a research or internship opportunity.
- In order to earn credits for research or an internship, students should work with their SESE advisor for approval.
- Apply for career opportunities.
### Term 8 104 - 120 Credit Hours

<table>
<thead>
<tr>
<th>Necessary course signified by ⭐</th>
<th>Hours</th>
<th>Minimum Grade</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>GLG 464: Solving Environmental Problems</td>
<td>3</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>Upper Division 4** (400 level) Earth and Environmental Studies (EES) Electives</td>
<td>3</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>Upper Division Humanities, Arts and Design (HU) OR Upper Division Social-Behavioral Sciences (SB)</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upper Division Elective</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elective</td>
<td>4</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Term hours subtotal: 16

---

**Approved BIO or PHY Course**

- BIO 100: The Living World (SQ)
- BIO 182: General Biology II (SG)
- PHY 101: Introduction to Physics (SQ)
- PHY 111: General Physics (SQ) AND PHY 113: General Physics Laboratory (SQ)

---

**Laboratory Science Major Electives**

- GLG 101: Introduction to Geology I (Physical) (SQ) AND GLG 103: Introduction to Geology I-Laboratory (SQ)
- GLG 102: Introduction to Geology II (Historical) (SG & H) AND GLG 104: Introduction to Geology II-Laboratory (SG)
- GLG 108: Water Planet (SQ)
- GLG 110: Dangerous World (SG & G) AND GLG 111: Dangerous World Laboratory (SG)
- SES 106: Habitable Worlds (SQ)
- SES 141: Energy In Everyday Life (SQ)

---

**Upper Division 4***(400 level) Earth and Environmental Studies (EES) Electives**

- ABS 430: Watershed Management
- ABS 440: Ecological Restoration Techniques
- ABS 479: Ecosystem Management and Planning (L)
- ABS 485: GIS in Natural Resources
- ABS 486: Introduction to Remote Sensing
- CEE 400: Earth Systems Engineering and Management ((L or HU) & H)
- ERM 402: Unit Treatment Technologies
- ERM 406: Environmental Chemistry
- ERM 426: Environmental Issues
- ERM 428: International Environmental Management (G)
- GIS 470: Advanced Statistics for Geography and Planning (CS)
- GLG 424: Petrology
- GLG 430: Paleontology
- GLG 435: Sedimentology
- GLG 441: Ore Deposits
- GLG 470: Hydrogeology
- GLG 481: Geochemistry
- GPH 405: Energy and Environment
- GPH 414: Climate Change (G)

---

- The list of approved major electives along with their pre-requisites may be viewed on the SESE website.
- Students are strongly encouraged to meet with SESE faculty advisors to discuss career options.
- The list of approved major electives along with their pre-requisites may be viewed on the SESE website.
Upper Division Earth and Environmental Studies (EES) Electives

ABS 302: Ethical and Policy Issues in Biology
ABS 350: Applied Statistics (CS)
ABS 370: Ecology
ABS 430: Watershed Management
ABS 440: Ecological Restoration Techniques
ABS 479: Ecosystem Management and Planning (L)
ABS 485: GIS in Natural Resources
ABS 486: Introduction to Remote Sensing
ASB 326: Human Impacts on Ancient Environments (SB & H)
BIO 311: Biology and Society
BIO 324: Environmental Ethics (HU)
CEE 400: Earth Systems Engineering and Management (L or HU) & H
ENG 371: Rhetoric of the Environmental Movement
ERM 302: Water and Wastewater Treatment Technology
ERM 402: Unit Treatment Technologies
ERM 406: Environmental Chemistry
ERM 426: Environmental Issues
ERM 428: International Environmental Management (G)
FIS 334: Science, Technology and Inequality (C)
GCU 364: Energy in the Global Arena (SB & G)
JUS 444: Environment and Justice (L & C)
PUP 442: Environmental Planning
SOS 414: Urban and Environmental Health (SB)
SOS 429: Human Impacts on Ecosystem Functioning
SOS 433: Sustainable Water Use
SOS 434: People and Nature: Ecosystem Services
STP 420: Introductory Applied Statistics (CS)
GIS 341: Introduction to Cartography and Georepresentation (CS)

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

GLG 301: Earth Science in Arizona and the Southwest

GLG 304: Minerals, Energy, and Society

GLG 310: Structural Geology

GLG 321: Mineralogy

GLG 424: Petrology

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 345: Environmental History (L)

JUS 334: Science, Technology and Inequality (C)

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

SOC 331: Environmental Sociology (SB & G)

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 (L or SB)

SOS 321: Policy and Governance in Sustainable Systems

SOS 323: Sustainable Urban Dynamics
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.

SOS 324: Sustainable Energy Technology and Systems
SOS 325: The Economics of Sustainability
SOS 326: Sustainable Ecosystems
SOS 327: Sustainable Food and Farms
SOS 372: Earth Science in Arizona and the Southwest
SOS 373: Minerals, Energy, and Society
SOS 414: Urban and Environmental Health (SB)
SOS 429: Human Impacts on Ecosystem Functioning
SOS 433: Sustainable Water Use
SOS 434: People and Nature: Ecosystem Services
STP 420: Introductory Applied Statistics (CS)

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 on the major map are current for the 2019 - 2020 academic year.