

EARTH, SOCIETY, & ENVIRONMENTAL SUSTAINABILITY: SCIENCE OF THE EARTH SYSTEM (SES), BSLAS

for the degree of Bachelor Science in Liberal Arts and Sciences in Earth, Society, & Environmental Sustainability, Science of the Earth System Concentration

The Earth, Society, & Environmental Sustainability, Science of the Earth System BSLAS is not currently accepting applications. Suspension of admissions effective Spring 2027. This program has been replaced by the Environmental Sustainability: Science of the Earth System, BSLAS (<http://catalog.illinois.edu/undergraduate/las/environmental-sustainability-bslas/science-of-the-earth-system/>).

All students wishing to attend graduate school in any field should discuss necessary supplementary course work with their advisor as early as possible.

A Major Plan of Study form must be completed and submitted to the LAS Student Affairs Office before the end of the fifth semester (60-75 hours). Study abroad courses may be substituted for major and minor requirements with approval of advisor.

Departmental distinction: Students who maintain grade point averages of at least 3.3 in all courses within the major and who undertake a faculty-guided individual research project for credit in the major are recommended for graduation with distinction.

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- Distinction: A minimum cumulative grade point average of 3.3, and have also completed an approved independent study project, approved senior thesis, or approved capstone.
- High Distinction: A minimum cumulative grade point average of 3.5, and have also completed an approved independent study project, approved senior thesis, or approved capstone.

- Highest Distinction: A minimum cumulative grade point average of 3.7, and also completed an approved senior thesis or approved research capstone.

Graduation Requirements

Minimum hours required for graduation: 120 hours.

Minimum required major and supporting course work: Normally equates to 47-56 hours. Twelve hours of 300- and 400-level courses in the major must be taken from this campus. Substitutions may be made with advisor approval.

University Requirements

The university and residency requirements can be found in the Student Code (<https://studentcode.illinois.edu/article3/part8/3-801/>) (§ 3-801) and in the Academic Catalog (<http://catalog.illinois.edu/general-information/degree-general-education-requirements/>).

General Education Requirements

Follows the campus General Education (Gen Ed) requirements (<https://courses.illinois.edu/gened/DEFAULT/DEFAULT/>). Some Gen Ed requirements may be met by courses required and/or electives in the program.

Code	Title	Hours
	Composition I	4-6
	Advanced Composition	3
	Humanities & the Arts (6 hours)	6
	Natural Sciences & Technology (6 hours)	6
	fulfilled by CHEM 102 or CHEM 202 and GEOL 107 or IB 150	
	Social & Behavioral Sciences (6 hours)	6
	Cultural Studies: Non-Western Cultures (1 course)	3
	Cultural Studies: US Minority Cultures (1 course)	3
	Cultural Studies: Western/Comparative Cultures (1 course)	3
	Quantitative Reasoning (2 courses, at least one course must be Quantitative Reasoning I)	6-10
	fulfilled by STAT 100, MATH 220 or MATH 221 and PHYS 101 or PHYS 211	
	Language Requirement (Completion of the fourth semester or equivalent of a language other than English is required)	0-20

Orientation and Professional Development

Code	Title	Hours
LAS 101	Design Your First Year Experience	1
	OR	
LAS 100 & LAS 101	Success in LAS for International Students and Design Your First Year Experience	3
	OR	
LAS 102	Transfer Advantage	1

Major Requirements

Code	Title	Hours
	ESE coursework	10
ESE 200	Earth Systems	3
ENSU 300	Environmental Sustainability	3

ESE 379	Introduction to Geographic Information Systems	4	ESE 311	Environmental Issues Today	3
Advanced Courses			18-24		
A minimum of six 300- and 400-level courses (from the lists below), totaling at least 18 credit hours, and in an academically coherent program approved by the advisor, are required. At least three of these six advanced courses must be listed or cross-listed as an ESE or ENSU course.					
Capstone and Experiential					
ESE 389	Environment and Sustainability Field Expedition	3	ESE 360	Environmental Writing	3
ESE 401	ESE Capstone	3	ESE 467	Multimedia Environmental Communications	3
ESE 497	Special Topics in ESE	1 to 4	ESE 477	Advanced Environmental Writing	3
Earth's Biosphere & Ecology					
ESE 439	Biogeography	3	ESE 498	Environmental Writing for Publication	3
HORT 430	Children and Nature	2	GGIS 350	Sustainability and the City	3
IB 362	Marine Biology	3	GGIS 384	Population Geography	3
IB 411	Bioinspiration	3	GGIS 495	Advanced Topics in Geography	3 or 4
IB 440	Plants and Global Change	3	GGIS 496	Climate & Social Vulnerability	3
IB 444	Insect Ecology	3	LA 430	Children and Nature	2
IB 451	Conservation Biology	4	LA 450	Ecology for Land Restoration	4
IB 452	Ecosystem Ecology	3	NRES 340	Environ Social Sci Res Meth	3
IB 453	Community Ecology	3	NRES 472	Environmental Psychology	4
IB 461	Ornithology	4	SOC 447	Environmental Sociology	3
NRES 348	Fish and Wildlife Ecology	3	Sustainability, Policy, and Global Change		
NRES 419	Env and Plant Ecosystems	3	ACE 310	Natural Resource Economics	3
NRES 420	Restoration Ecology	4	ACE 406	Environmental Law	3
Earth's Physical Systems, Resources, & Hazards					
ABE 436	Renewable Energy Systems	3	ACE 411	Environment and Development	3
ATMS 420	Atmospheric Chemistry	4	ATMS 307	Climate Processes	3
CEE 330	Environmental Engineering	3	ATMS 447	Climate Change Assessment	3
CHEM 360	Chemistry of the Environment	3	ATMS 449	Biogeochemical Cycles	4
ENSU 302	Air Pollution to Global Change	3	CPSC 336	Tomorrow's Environment	3
ESE 320	Water Planet, Water Crisis	3	CPSC 415	Bioenergy Crops	3
ESE 333	Earth Materials and the Env	4	CPSC 431	Plants and Global Change	3
ESE 411	Geomorphology	4	ENSU 303	Sustainable Business I	4
ESE 445	Earth Resources Sustainability	3	ENSU 310	Renewable & Alternative Energy	4
ESE 470	Introduction to Hydrogeology	4	ENSU 410	Sustainable Organizations	4
ESE 486	Environmental Consulting	3	ESE 410	Green Development	4
GEOL 380	Environmental Geology	4	ESE 465	Transportation & Sustainability	3
GEOL 450	Investigating the Earth's Interior	3	ESE 466	Environmental Policy	3
GEOL 451	Environmental Geophysics	4	ESE 482	Challenges of Sustainability	3
GEOL 460	Geochemistry	3	ETMA 311	Humanity in the Food Web	3
GGIS 401	Watershed Hydrology	3	NPRE 480	Energy and Security	3
GGIS 406	Fluvial Geomorphology	4	NRES 325	Natural Resource Policy Mgmt	3
GGIS 408	Humans and River Systems	4	NRES 439	Env and Sustainable Dev	3
MSE 489	Matl Select for Sustainability	3	UP 446	Sustainable Planning Seminar	4
NRES 351	Introduction to Environmental Chemistry	3	UP 456	Sustainable Planning Workshop	4
Environment & the Human Response					
AGCM 330	Environmental Communications	3	UP 480	Sustainable Design Principles	2
HK 408	Environmental Health	3	Visualizing the Earth System		
ENGL 476	Topics in Literature and the Environment	3	ATMS 305	Computing and Data Analysis	3
ENSU 301	Soc Impacts Weather & Climate	3	ESE 380	Geographic Information Systems II	4
			ESE 421	Earth Systems Modeling	4
			GGIS 371	Spatial Analysis	4
			GGIS 407	CyberGIS & Geospatial Data Science	4
			GGIS 412	Geospatial Technologies & Society	3
			GGIS 460	Aerial Photo Analysis	3
			GGIS 476	Environmental Remote Sensing	3
			GGIS 477	Introduction to Remote Sensing	3
			GGIS 479	Advanced Topics in GIS	4
			NRES 427	Modeling Natural Resources	4
			NRES 454	GIS in Natural Resource Mgmt	4

Science of the Earth System Concentration Requirements

Cognate Course Work		19-22
CHEM 102 or CHEM 202	General Chemistry I Accelerated Chemistry I	3
CHEM 103 or CHEM 203	General Chemistry Lab I Accelerated Chemistry Lab I	1
MATH 220 or MATH 221	Calculus Calculus I	5
STAT 100	Statistics	3
PHYS 101 or PHYS 211	College Physics: Mech & Heat University Physics: Mechanics	5
GEOL 107 or IB 150	Physical Geology Organismal & Evolutionary Biol	4

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Sample Sequence

This sample sequence is intended to be used only as a guide for degree completion. All students should work individually with their academic advisors to decide the actual course selection and sequence that works best for them based on their academic preparation and goals. Enrichment programming such as study abroad, minors, internships, and so on may impact the structure of this four-year plan. Course availability is not guaranteed during the semester indicated in the sample sequence.

Students must fulfill their Language Other Than English requirement by successfully completing a fourth level of a language other than English. This may require up to four semesters of language depending on high school coursework or placement. For more information, see the corresponding section on the Degree and General Education Requirements page (<http://catalog.illinois.edu/general-information/degree-general-education-requirements/>).

First Year	
First Semester	Hours
LAS 101	1
ESE 200	3
Language Other Than English (3rd level)	4
Composition I or General Education course	4
General Education course	3
15	

First Year	
Second Semester	Hours
CHEM 102	3
General Education course or Composition I	3
CHEM 103	1
Language Other Than English (4th level)	4

Free Elective course	3
14	

Second Year	
First Semester	Hours
IB 150	4
MATH 220	5
Free Elective course	3
Free Elective course	3
15	
Total Hours 15	

Second Year	
Second Semester	Hours
STAT 100	3
ENSU 300	3
General Education course	3
General Education course	3
Free Elective course	3
15	
Total Hours 15	

Third Year	
First Semester	Hours
ESE 379	4
Advanced ESE or ENSU course	3
PHYS 101	5
Free Elective course	3
15	
Total Hours 15	

Third Year	
Second Semester	Hours
Advanced ESE or ENSU course	3
General Education course	3
General Education course	3
Free Elective course	3
Free Elective course	3
15	
Total Hours 15	

Fourth Year	
First Semester	Hours
Advanced ESE or ENSU course	4
Advanced course from list	3
General Education course	3
Free Elective course	3
Free Elective course	3
16	
Total Hours 16	

Fourth Year

Second Semester	Hours
Advanced course from list	3
Advanced course from list	3
General Education course	3
Free Elective course	3
Free Elective course	3
	15

Total Hours 15**Total Hours: 120**

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1. Be able to recognize, critique and implement commonly accepted Sustainability models and ideas in a wide variety of settings, using systems thinking to link social and natural science concepts.
2. Have a fundamental understanding of the underlying natural science; being able to recognize and apply appropriate scientific methods.
3. Use quantitative methods to describe, understand and evaluate theoretical and applied issues in environmental and sustainability study; this includes direct calculation, working with data, and using quantitative models.
4. Be able to critically evaluate and then communicate environmental and sustainability concepts to both specialized and wide audiences.
5. Students will demonstrate professional competence in environmental and sustainability practice by executing appropriate laboratory and field techniques, applying Geographic Information Science tools and software, and selecting and employing suitable quantitative and qualitative analytical methods.

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School of Earth, Society & Environment **(<https://www.earth.illinois.edu/>)**

Earth, Society & Environment Faculty (<https://earth.illinois.edu/directory/faculty/>)

Earth, Society & Environment advising (<https://esec.illinois.edu/academics/undergraduate-programs/undergraduate-advising/>)

College of Liberal Arts and Sciences **(<https://las.illinois.edu/>)**

overview of college admissions & requirements: Liberal Arts & Sciences
(<http://catalog.illinois.edu/schools/las/academic-units/>)