SCHOOL OF EARTH, SOCIETY, AND ENVIRONMENT

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http://www.earth.illinois.edu/students/

The major in Earth, Society, and Environmental Sustainability (ESE) offers a unique, multidisciplinary program in the College of Liberal Arts and Sciences (LAS). Students will learn about the interconnectedness of environmental, economic, and social systems of the world; the implications of our actions on the environment; factors that determine the sustainability of human institutions, organizations, cultures, and technologies; finding solutions through innovative approaches; and expanding future options by practicing environmental stewardship. Following the classical definition of sustainability, the aim is to develop citizens, businesses, and societies that meet the needs of the present without compromising the ability of future generations to do the same.

Required introductory coursework provide breadth in the essential natural and social sciences needed for interdisciplinary environmental sustainability study. The major offers two concentrations within which majors gain content expertise: Science of the Earth System, and Society and the Environment. Depth of knowledge is achieved by requiring a minimum of five advanced classes in a coherent field of study.

Off-campus students who plan to transfer to this degree should have completed or have in progress, the following:

- the Composition 1 requirement.
- the third level of high school foreign language or second level of college foreign language.

It is highly recommended that off-campus students complete the following requirements before transferring to the online degree - students who have not completed the following requirements may have to take additional coursework (either at UIUC or elsewhere) and should consult the program advisor:

- the UIUC LAS language requirement should be satisfied.
- the General Education Distribution Requirements of the College of Liberal Arts and Sciences should be completed.
- the Cognate Coursework should be completed.

Minor in Earth, Society, and Environment

The ESE minor is designed for students who desire to obtain a background in topics related to environmental studies, in order to support study and practice of their major field. A minimum of 18 hours is required.

For more information and a list of approved courses visit: www.earth.illinois.edu. (http://www.earth.illinois.edu)

Questions may be addressed to Jonathan Tomkin, tomkin@illinois.edu.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introductory course from the Earth's Physical Systems, Resources, and Hazards Area course list</td>
<td>3-4</td>
<td></td>
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<tr>
<td>Introductory course from either the Environment and the Human Response or Sustainability, Policy, and Global Change Area course lists</td>
<td>3-4</td>
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<tr>
<td>ESE 200 Earth Systems</td>
<td>3</td>
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<tr>
<td>Three Advanced Courses from a list maintained by the minor advisor, at least two of which must be listed or cross listed as ESE courses</td>
<td>9-12</td>
<td></td>
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<tr>
<td>Total Hours</td>
<td>18-23</td>
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ENSU Class Schedule (https://courses.illinois.edu/schedule/DEFAULT/DEFAULT/ENSU)

Environmental Sustainability Courses

ENSU 300 Environmental Sustainability credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/ENSU/300)
Same as LA 370 and NRES 370. See LA 370.
ENSU 301 Soc Impacts Weather & Climate  credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/ENVS/301)
Same as ATMS 322. See ATMS 322.
This course satisfies the General Education Criteria for:
Social Beh Sci - Soc Sci

ENSU 302 Air Pollution to Global Change  credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/ENVS/302)
Same as ATMS 323. See ATMS 323.

ENSU 303 Sustainable Business I  credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/ENVS/303)
At the dawn of the 21st century, business and society is confronted with a confluence of factors, including environmental degradation, widespread poverty, and the need for renewable sources of energy. The diverse sources of information that point to an uncertain future suggests that a 'business as usual' approach has to be replaced with more proactive alternatives that address the needs of the environment, consumer welfare and community development. This course on sustainable marketing management begins to address these issues and engender an appreciation among our students for the challenges that lie ahead for businesses. Looks at the relationship between sustainable business practices, societal welfare, and ecological systems. Student projects will apply marketing and business concepts to create a sustainable business plan for organizations.

ENSU 310 Renewable & Alternative Energy  credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/ENVS/310)
Fossil fuel supplies are finite and growing energy demands of an ever increasing population will quickly deplete these reservoirs. Focuses on the use and availability of renewable and alternative energy sources such as wind, solar, bio-fuels, ethanol, geothermal and nuclear power as well as the impacts of using these alternative energy sources on climate, society and the global economy. Students will develop the student’s perspective on human energy consumption at all scales through a complete scale analysis of energy production and consumption – from the individual to the national government to the world economy.

ENSU 311 Sustainable Organizations  credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/ENVS/311)
Explores the notion of sustainability as a core business tenant, and how entrepreneurs and their companies are working to create and capture financial, social, and environmental value. The focus is on on large, for profit companies, but lessons will extend to smaller, non-profit, and governmental organizations. The aim is to prepare participants for the green challenge of adopting and implementing socially responsible practices in the workplace. 4 undergraduate hours. 4 graduate hours.

Environmental Studies Courses

ENSU 101 Introduction to Energy Sources  credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/ENVS/101)
Same as NPRE 101. See NPRE 101.
This course satisfies the General Education Criteria for:
Nat Sci Tech - Phys Sciences
Quantitative Reasoning II

ENSU 210 Environmental Economics  credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/ENVS/210)
Same as ACE 210, ECON 210, NRES 210, and UP 210. See ACE 210.
This course satisfies the General Education Criteria for:
Social Beh Sci - Soc Sci

ENSU 211 Environmental Policy and Energy  credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/ENVS/211)
Same as ACE 211, ECON 211, NRES 211, and UP 211. See ACE 211.

ENSU 220 Communicating Agriculture  credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/ENVS/220)
Same as AGCM 220 and NRES 220. See AGCM 220.
This course satisfies the General Education Criteria for:
Advanced Composition

ENSU 299 Ind Studies of Env. Topics  credit: 0 to 4 Hours. (https://courses.illinois.edu/schedule/terms/ENVS/299)
Approved for letter and S/U grading. Prerequisite: Consent of instructor.

ENSU 300 Tools for Sustainability  credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/ENVS/300)
Develops systems-thinking skills needed to make connections between different disciplines to better understand problems and trade-offs related to sustainability. Students will gain competence in conducting cost-benefit and life-cycle analyses and learn about sustainability metrics while improving their ability to communicate about the integrated dimensions of sustainability within an interdisciplinary setting. Prerequisite: For students enrolled in the Sustainability, Energy and Environment Fellows Program.

ENSU 310 Natural Resource Economics  credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/ENVS/310)
Same as ACE 310, and NRES 310. See ACE 310.

ENSU 330 Environmental Communications  credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/ENVS/330)
Same as AGCM 330 and NRES 330. See AGCM 330.

ENSU 336 Tomorrow's Environment  credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/ENVS/336)
Same as AGCM 336 and CPSC 336. See CPSC 336.

ENSU 380 Environmental Geology  credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/ENVS/380)
Same as GEOL 380. See GEOL 380.

ENSU 406 Urban Ecology  credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/ENVS/406)
Same as UP 406. See UP 406.

ENSU 420 Conservation Biology  credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/ENVS/420)
Same as CPSC 436 and IB 451. See IB 451.

ENSU 430 Comm in Env Social Movements  credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/ENVS/430)
Same as AGCM 430 and NRES 430. See AGCM 430.

ENSU 431 Environ Toxicology & Health  credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/ENVS/431)
Same as CHLH 461 and IB 485. See IB 485.

ENSU 432 Pesticide Toxicology  credit: 3 or 4 Hours. (https://courses.illinois.edu/schedule/terms/ENVS/432)
Same as CB 434 and IB 486. See IB 486.

ENSU 440 Environmental Sociology  credit: 3 or 4 Hours. (https://courses.illinois.edu/schedule/terms/ENVS/440)
Same as RSOC 447 and SOC 447. See SOC 447.

ENSU 447 Environmental Health  credit: 3 or 4 Hours. (https://courses.illinois.edu/schedule/terms/ENVS/447)
Same as RSOC 447 and SOC 447. See SOC 447.

ENSU 469 Environmental Health Fellows  credit: 3 or 4 Hours. (https://courses.illinois.edu/schedule/terms/ENVS/469)
Same as CHLH 469. See CHLH 469.

ENSU 474 Principles of Epidemiology  credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/ENVS/474)
Same as CHLH 474 and PATH 474. See CHLH 474.
ENVS 480 Basic Toxicology credit: 3 Hours. (courses.illinois.edu/schedule/terms/ENVS/480)
Same as CB 449, CPSC 433 and FSHN 480. See FSHN 480.

ENVS 491 Sustainability Experience credit: 1 to 4 Hours. (courses.illinois.edu/schedule/terms/ENVS/491)
Students will work with faculty, staff, and/or the Student Sustainability Committee to advance campus sustainability goals and the Illinois Climate Action Plan. This course is designed to enable students to apply their disciplinary knowledge to tackle inherently interdisciplinary problems, while also developing and enhancing their critical analysis, leadership, organizational, and project management/evaluation skills and preparing them for addressing sustainability issues in their careers.
1 to 4 undergraduate hours. 1 to 4 graduate hours. Approved for letter and S/U grading. May be repeated, if topics vary. Prerequisite: Consent of instructor.

ENVS 492 Sustainability, Energy and Environment Capstone credit: 4 Hours. (courses.illinois.edu/schedule/terms/ENVS/492)
Problem-focused learning and a holistic and interdisciplinary perspective to address critical sustainability-related challenges facing society. Students will gain critical thinking skills to examine the sustainability of various decisions, analyze the trade-offs between the economic, environmental, and social dimensions of sustainability solutions, learn techniques to operationalize the concept of sustainability, and develop practical skills in sustainability assessment. Team projects will develop team building skills, communication skills and project management skills. 4 undergraduate hours. No graduate credit. Prerequisite: ENVS 301. For students enrolled in the Sustainability, Energy and Environment Fellows Program.

ESE Class Schedule (courses.illinois.edu/schedule/DEFAULT/DEFAULT/ESE)

Earth, Society, Environment Courses

ESE 103 Earth's Physical Systems credit: 4 Hours. (courses.illinois.edu/schedule/terms/ESE/103)
Same as GEOG 103. See GEOG 103.
This course satisfies the General Education Criteria for:
Nat Sci Tech - Phys Sciences

ESE 104 Geology of the National Parks credit: 3 Hours. (courses.illinois.edu/schedule/terms/ESE/104)
Same as GEOL 104. See GEOL 104.
This course satisfies the General Education Criteria for:
Nat Sci Tech - Phys Sciences

ESE 106 Geographies of Globalization credit: 3 Hours. (courses.illinois.edu/schedule/terms/ESE/106)
Same as GEOG 106. See GEOG 106.
This course satisfies the General Education Criteria for:
Cultural Studies - Non-West
Social Beh Sci - Soc Sci

ESE 111 Emergence of Life credit: 3 Hours. (courses.illinois.edu/schedule/terms/ESE/111)
Same as GEOL 111. See GEOL 111.
This course satisfies the General Education Criteria for:
Nat Sci Tech - Life Sciences

ESE 117 The Oceans credit: 3 Hours. (courses.illinois.edu/schedule/terms/ESE/117)
Same as GEOL 117. See GEOL 117.
This course satisfies the General Education Criteria for:
Nat Sci Tech - Phys Sciences

ESE 118 Natural Disasters credit: 3 Hours. (courses.illinois.edu/schedule/terms/ESE/118)
Same as GEOL 118 and GLBL 118. See GEOL 118.
This course satisfies the General Education Criteria for:
Nat Sci Tech - Phys Sciences

ESE 120 Severe and Hazardous Weather credit: 3 Hours. (courses.illinois.edu/schedule/terms/ESE/120)
Same as ATMS 120. See ATMS 120.
This course satisfies the General Education Criteria for:
Nat Sci Tech - Phys Sciences

ESE 122 Big Rivers of the World credit: 3 Hours. (courses.illinois.edu/schedule/terms/ESE/122)
Same as GEOG 222. See GEOG 222.

ESE 140 Climate and Global Change credit: 3 Hours. (courses.illinois.edu/schedule/terms/ESE/140)
Same as GEOL 143. See GEOL 143.
This course satisfies the General Education Criteria for:
Nat Sci Tech - Life Sciences

ESE 143 History of Life credit: 3 Hours. (courses.illinois.edu/schedule/terms/ESE/143)
Same as GEOG 143. See GEOG 143.
This course satisfies the General Education Criteria for:
Nat Sci Tech - Life Sciences

ESE 149  Undergraduate Open Seminar credit: 1 to 5 Hours. (courses.illinois.edu/schedule/terms/ESE/149)
Special topics in Earth, Society, and the Environment; content is variable. May be repeated if topics vary.

ESE 150 Environmental Science for Sustainability credit: 3 Hours. (courses.illinois.edu/schedule/terms/ESE/150)
Interdisciplinary lecture class intended to introduce Earth Systems studies, which focuses on integrating social and natural science approaches to studying the Earth and its environments.

ESE 160 Energy and Environment Fellows Program credit: 2 Hours. (courses.illinois.edu/schedule/terms/ESE/160)
This course satisfies the General Education Criteria for:
Social Beh Sci - Soc Sci

ESE 199 Undergraduate Open Seminar credit: 1 to 5 Hours. (courses.illinois.edu/schedule/terms/ESE/199)
Special topics in Earth, Society, and the Environment; content is variable. May be repeated if topics vary.

ESE 200 Earth Systems credit: 3 Hours. (courses.illinois.edu/schedule/terms/ESE/200)
Interdisciplinary lecture class intended to introduce Earth Systems studies, which focuses on integrating social and natural science approaches to studying the Earth and its environments.

ESE 208 History of the Earth System credit: 4 Hours. (courses.illinois.edu/schedule/terms/ESE/208)
Same as GEOG 208. See GEOG 208.
This course satisfies the General Education Criteria for:
Nat Sci Tech - Phys Sciences

ESE 210 Social & Environmental Issues credit: 3 Hours. (courses.illinois.edu/schedule/terms/ESE/210)
Same as GEOG 210. See GEOG 210.
This course satisfies the General Education Criteria for:
Social Beh Sci - Soc Sci

ESE 215 Resource Conflicts credit: 3 Hours. (courses.illinois.edu/schedule/terms/ESE/215)
Same as GEOG 215 and GLBL 215. See GEOG 215.
This course satisfies the General Education Criteria for:
Social Beh Sci - Soc Sci

ESE 220 Earth's Physical Systems credit: 4 Hours. (courses.illinois.edu/schedule/terms/ESE/220)
Same as GEOG 220. See GEOG 220.

Information listed in this catalog is current as of 01/2019
ESE 254 American People, Places, & Environments credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/ESE/254)
Same as GEOG 254. See GEOG 254.
This course satisfies the General Education Criteria for:
Social Beh Sci - Soc Sci
Cultural Studies - US Minority

ESE 287 Environment and Society credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/ESE/287)
Same as GEOG 287, NRES 287 and PS 273. See NRES 287.
This course satisfies the General Education Criteria for:
Social Beh Sci - Soc Sci
Cultural Studies - Western

ESE 293 The Anthropocene credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/ESE/293)
Same as ENGL 293. See ENGL 293.

ESE 311 Environmental Issues Today credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/ESE/311)
Seminar exposing students in the Environmental Fellows Program to different disciplinary perspectives on specific environmental issues, as revealed in the scholarly literature. Specific problems will vary from term to term. This seminar helps students make the transition from disciplinary to interdisciplinary thinking. Team-taught. Same as ATMS 311. Prerequisite: Admission to Environmental Fellows Program or consent of advisor.

ESE 320 Water Planet, Water Crisis credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/ESE/320)
Study of the science of water on planet earth, the developing water crisis, and some possible solutions to it. Topics include water’s unique physical and chemical properties; how it profoundly shapes the earth/ocean/atmosphere system; dynamics of oceans, atmosphere, lakes, rivers, groundwater, and ice masses; current fresh water supplies and their distribution on earth relative to population; current and future water crises and the compounding effects of droughts, floods, and global change; and prospects for some technological and economic approaches to easing the crisis. Same as GEOG 370 and GEOL 370.

ESE 333 Earth Materials and the Env credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/ESE/333)
Same as GEOL 333. See GEOL 333.

ESE 350 Sustainability and the City credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/ESE/350)
Same as GEOG 350. See GEOG 350.

ESE 381 Environmental Perspectives credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/ESE/381)
Same as GEOG 381. See GEOG 381.

ESE 386 Arctic Environment & Society credit: 6 Hours. (https://courses.illinois.edu/schedule/terms/ESE/386)
Same as GLBL 386 and SCAN 386. See GLBL 386.

ESE 389 Environment and Sustainability Field Study credit: 1 Hour. (https://courses.illinois.edu/schedule/terms/ESE/389)
Group expedition to study environment and sustainability issues at a nearby field site. Includes in-class meetings, student-led presentation, and a field trip that may be short as part of a day or as long as several days. Field trip and field trip fee required. Additional fees may apply. See Class Schedule. Approved for letter and S/U grading. May be repeated in separate terms if topics vary. Prerequisite: For ESE majors, minors, and Sustainability Living Learning Community students. Non majors can apply to the waitlist.

ESE 392 Environmental Writing credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/ESE/392)
Equips students to write about the environment for various audiences, with a focus on specific current efforts to promote sustainability on the Urbana-Champaign campus. We will practice effective techniques for each stage of the writing process—from defining topics, to gathering information, to drafting active, engaging prose. Readings will include models of effective environmental writing and "how to" pieces by experts. Research will include visits to campus sites and student-conducted interviews with subjects. Same as ENGL 360. Prerequisite: Completion of campus Composition I general education requirement.
This course satisfies the General Education Criteria for:
Advanced Composition

ESE 393 Environmental Writing credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/ESE/393)
Equips students to write about the environment for various audiences, with a focus on specific current efforts to promote sustainability on the Urbana-Champaign campus. We will practice effective techniques for each stage of the writing process—from defining topics, to gathering information, to drafting active, engaging prose. Readings will include models of effective environmental writing and "how to" pieces by experts. Research will include visits to campus sites and student-conducted interviews with subjects. Same as ENGL 360. Prerequisite: Completion of campus Composition I general education requirement.
This course satisfies the General Education Criteria for:
Advanced Composition

ESE 401 ESE Capstone credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/ESE/401)
Capstone experience for majors in Earth, Society, and Environment Sustainability. 3 undergraduate hours. No graduate credit. Approved for Letter and S/U grading. May be repeated once.

ESE 410 Green Development credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/ESE/410)
Same as GEOG 410. See GEOG 410.

ESE 411 Geomorphology credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/ESE/411)
Same as GEOG 411. See GEOG 411.

ESE 412 Earth Systems Modeling credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/ESE/412)
Same as ATMS 412, GEOG 412, GEOL 481 and NRES 422. See ATMS 412.

ESE 439 Biogeography credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/ESE/439)
Same as ANTH 436, GEOG 436, IB 439, and NRES 441. See IB 439.
Introduces the physical (energy, mineral, and soil) resources of the Earth, the environmental consequences of producing and using resources, the controls on resource supplies, and the alternatives to traditional supplies. Focuses on the geological origin and context of resources, the means of exploration and production, the history of production, and sustainability issues related to consumption and depletion. Provides an understanding of why resources can be scarce and expensive, why many are not renewable, and why their use impacts the Earth System. May include field trips. 3 undergraduate hours. 3 graduate hours. Credit is not given for both ESE 445 and GEOL 380. Prerequisite: Junior standing or higher.

ESE 452 Ecosystem Ecology credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/ESE/452)
Same as IB 452 and NRES 462. See IB 452.

ESE 462 Ecological Criticism credit: 3 or 4 Hours. (https://courses.illinois.edu/schedule/terms/ESE/462)
Same as CWL 460 and REL 462. See REL 462.

ESE 465 Transportation & Sustainability credit: 3 or 4 Hours. (https://courses.illinois.edu/schedule/terms/ESE/465)
Same as GEOG 465. See GEOG 465.
This course satisfies the General Education Criteria for: Advanced Composition

ESE 466 Environmental Policy credit: 3 or 4 Hours. (https://courses.illinois.edu/schedule/terms/ESE/466)
Same as GEOG 466. See GEOG 466.

ESE 467 Multimedia Environmental Communications credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/ESE/467)
Students will develop capacities to communicate with a broad audience about sustainability and the environment. Storytelling and clear exposition across multiple platforms will be emphasized, including blogs, audio podcasts and short videos, among others. In addition, students in the course will have the opportunity to partner with campus units and other local organizations to create materials that will be useful for real-world outreach and education efforts as well as credit in the course. Same as ENGL 467. 3 undergraduate hours. No graduate credit.

ESE 470 Introduction to Hydrogeology credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/ESE/470)
Same as GEOL 470. See GEOL 470.

ESE 477 Advanced Environmental Writing credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/ESE/477)
Same as ENGL 477. See ENGL 477.
This course satisfies the General Education Criteria for: Advanced Composition

ESE 481 Intl Environ Cooperation credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/ESE/481)
Same as GEOG 481. See GEOG 481.

ESE 482 Challenges of Sustainability credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/ESE/482)
An interdisciplinary approach to investigating the meaning and practice of sustainability in the contemporary Earth system. As a consequence, students explore the sustainability of crucial resources - water, soil, energy, mineral and the biota - in the context of the social and environmental systems in which these resources are used, including the moral, physical, ecological, political and economic. Same as GEOG 482 and GEOL 483. 3 undergraduate hours. 3 graduate hours. Prerequisite: Junior or senior standing, or consent of instructor.