Environmental Science (BS)

Solving the world’s most pressing environmental problems requires understanding the scientific aspects of sustainability. Our program in environmental science prepares students to develop innovative solutions to challenges such as climate change, air and water pollution, and biodiversity loss.

Students learn about the scientific underpinnings of problems in environmental sustainability.

Curriculum

Environmental Science students complete coursework that includes both a heavy dose of basic science requirements and courses spanning a variety of disciplines pertinent to understanding the context in which environmental challenges reside.

Core Curriculum

The BS in Environmental Science has the following requirements:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENVS 137</td>
<td>Foundations of Environmental Science I</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 101</td>
<td>General Biology I</td>
<td>3</td>
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<tr>
<td>BIOL 111</td>
<td>General Biology I Lab</td>
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<tr>
<td>CHEM 160</td>
<td>Chemical Structure and Properties</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 161</td>
<td>Chemical Structure and Properties Laboratory</td>
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<tr>
<td>BIOL 102</td>
<td>General Biology II</td>
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<tr>
<td>BIOL 112</td>
<td>General Biology II Lab</td>
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<tr>
<td>CHEM 180</td>
<td>Chemical Reactivity I</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 181</td>
<td>Chemical Reactivity I Lab</td>
<td>1</td>
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<tr>
<td>ENVS 200</td>
<td>Environmental Careers and Professional Skills</td>
<td>1</td>
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<tr>
<td>ENVS 203</td>
<td>Environmental Statistics</td>
<td>3</td>
</tr>
<tr>
<td>ENVS 274</td>
<td>Chemistry of the Environment</td>
<td>3</td>
</tr>
<tr>
<td>ENVS 275</td>
<td>Chemistry of the Environment Lab</td>
<td>1</td>
</tr>
<tr>
<td>ENVS 280</td>
<td>Principles of Ecology</td>
<td>3</td>
</tr>
<tr>
<td>ENVS 286</td>
<td>Principles of Ecology Lab</td>
<td>1</td>
</tr>
<tr>
<td>PLSC 392</td>
<td>Environmental Politics</td>
<td>3</td>
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</tbody>
</table>

Justice and Ethics Choice

Select one of the following: 3

- ENVS 284 Environmental Justice
- PHIL 287 Environmental Ethics
- THEO 204 Religious Ethics and the Ecological Crisis

Economics Choice

ENVS 335 Ecological Economics 3
or ECON 328 Environmental Economics

Engaged Learning Choice

Select one of the following: 3

- ENVS 226 Science & Conservation of Freshwater Ecosystems
- ENVS 267 Bird Conservation and Ecology
- ENVS 273 Energy and The Environment
- ENVS 281V Environmental Sustainability
- ENVS 340 Natural History of Belize
- ENVS 345 Conservation and Sustainability of Neotropical Ecosystems
- ENVS 350A Solutions to Environmental Problems: Water
- ENVS 350B Solutions to Environmental Problems: Biogas
- ENVS 350C Solutions to Environmental Problems: Climate Action
- ENVS 350F Solutions to Environmental Problems: Food Systems
- ENVS 391 Environmental Research
- ENVS 395 Environmental Internship

Capstone Choice

Select one of the following: 3

- ENVS 390 Integrative Seminar
- ENVS 391C Independent Environmental Research (Capstone)
- ENVS 395C Environmental Internship (Capstone)

Total Hours 46

Electives

The BA in Environmental Science has electives (21 credit hours) in the following categories:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>ENVS 204</td>
<td>Gender, Health &amp; Environment</td>
<td>3</td>
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<tr>
<td>ENVS 260 / COMM 260</td>
<td>Environmental Journalism</td>
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</tr>
<tr>
<td>ENVS 279 / HIST 279E</td>
<td>Climate and History</td>
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<tr>
<td>ENVS 284</td>
<td>Environmental Justice</td>
<td>3</td>
</tr>
<tr>
<td>ENVS 297 / HIST 297E</td>
<td>North American Environmental History</td>
<td></td>
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<tr>
<td>ENVS 298</td>
<td>Special Topics (with SES approval)</td>
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<tr>
<td>ENVS 338</td>
<td>Climate Change and Human Health</td>
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</tr>
<tr>
<td>ENVS 350A</td>
<td>Solutions to Environmental Problems: Water</td>
<td></td>
</tr>
<tr>
<td>ENVS 350B</td>
<td>Solutions to Environmental Problems: Biogas</td>
<td></td>
</tr>
<tr>
<td>ENVS 350C</td>
<td>Solutions to Environmental Problems: Climate Action</td>
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</tr>
<tr>
<td>ENVS 350F</td>
<td>Solutions to Environmental Problems: Food Systems</td>
<td></td>
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<tr>
<td>ENVS 383</td>
<td>Human Dimensions of Conservation</td>
<td></td>
</tr>
<tr>
<td>ENVS 391</td>
<td>Environmental Research</td>
<td></td>
</tr>
<tr>
<td>ENVS 395</td>
<td>Environmental Internship</td>
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<tr>
<td>ENVS 398</td>
<td>Special Topics (with SES approval)</td>
<td></td>
</tr>
<tr>
<td>ENVS 399</td>
<td>Directed Readings</td>
<td></td>
</tr>
<tr>
<td>COMM 101</td>
<td>Public Speaking &amp; Critical Thinking</td>
<td></td>
</tr>
<tr>
<td>COMM 277</td>
<td>Organizational Communication</td>
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<tr>
<td>COMM 306</td>
<td>Environmental Advocacy</td>
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<tr>
<td>COMM 322</td>
<td>Guerilla Media</td>
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<tr>
<td>ENGL 288</td>
<td>Nature in Literature</td>
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<tr>
<td>PHIL 287</td>
<td>Environmental Ethics</td>
<td></td>
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<tr>
<td>PSYC 277</td>
<td>Environmental Psychology</td>
<td></td>
</tr>
<tr>
<td>SOCL 226</td>
<td>Science, Technology, &amp; Society</td>
<td></td>
</tr>
</tbody>
</table>
SOCL 252  Global Inequalities
SOCL 272  Environmental Sociology
SOCL 276  The Sociology and Politics of Food
SOCL 278  Global Health
THEO 204  Religious Ethics and the Ecological Crisis
THEO 344  Theology and Ecology

Policy, Economics, and Resource Management

Select one of the following:  3

ENVS 298  Special Topics (with SES approval)
ENVS 310  Introduction to Environmental Law & Policy
ENVS 311  Natural Resources and Land Use Law & Policy
ENVS 312  Water Law & Policy
ENVS 313  Energy Law & Policy
ENVS 327  Food Systems Analysis
ENVS 332  Industrial Ecology
ENVS 333  Introduction to the Circular Economy
ENVS 335  Ecological Economics
ENVS 336  Design for Circular & Sustainable Business
ENVS 338  Climate Change and Human Health
ENVS 351  Introduction to Sustainability Concepts & Impacts
ENVS 363  Sustainable Business Management
ENVS 364  Sustainability Management in the Global Context
ENVS 383  Human Dimensions of Conservation
ENVS 384  Conservation Economics
ENVS 389  Ecological Risk Assessment
ENVS 391  Environmental Research
ENVS 395  Environmental Internship
ENVS 398  Special Topics (with SES approval)
ENVS 399  Directed Readings
ECON 328  Environmental Economics
GLST 305  Globalization and Environmental Sustainability
MGMT 201  Managing People and Organizations
PLSC 354  Global Environmental Politics

Environmental Science Electives

Select five, at least three of which must be at the 300 level:  15

ENVS 204  Gender, Health & Environment
ENVS 207  Plants and Civilization
ENVS 218  Biodiversity & Biogeography
ENVS 223  Soil Ecology
ENVS 224  Climate & Climate Change
ENVS 226  Science & Conservation of Freshwater Ecosystems
ENVS 267  Bird Conservation and Ecology
ENVS 273  Energy and The Environment
ENVS 278  Hydrology
ENVS 281V
ENVS 283  Environmental Sustainability
ENVS 298  Special Topics (with SES approval)
ENVS 300  Introduction to Public Health
ENVS 301  Environmental Health
ENVS 303  Introduction to Epidemiology
ENVS 319  Winter Ecology
ENVS 320  Conservation Biology
ENVS 322  Invasive Species
ENVS 325  Sustainable Agriculture
ENVS 326  Agroecosystems
ENVS 327  Food Systems Analysis
ENVS 330  Restoration Ecology
ENVS 338  Climate Change and Human Health
ENVS 340  Natural History of Belize
ENVS 345  Conservation and Sustainability of Neotropical Ecosystems
ENVS 350A  Solutions to Environmental Problems: Water
ENVS 350B  Solutions to Environmental Problems: Biogas
ENVS 350C  Solutions to Environmental Problems: Climate Action
ENVS 350F  Solutions to Environmental Problems: Food Systems
ENVS 369  Field Ornithology
ENVS 380  Introduction to Geographic Information Systems
ENVS 381  Advanced GIS Applications
ENVS 382  Remote Sensing
ENVS 383  Human Dimensions of Conservation
ENVS 388  Applied Environmental Statistics
ENVS 389  Ecological Risk Assessment
ENVS 391  Environmental Research
ENVS 395  Environmental Internship
ENVS 398  Special Topics (with SES approval)
ENVS 399  Directed Readings
ANTH 104  The Human Ecological Footprint
ANTH 303  People and Conservation
BIOL, CHEM, PHYS 300-level courses (with SES approval)

Total Hours  21

School of Environmental Sustainability Graduation Requirements

All SES students are required to complete a foreign language requirement and a writing intensive requirement. The SES language requirement can be fulfilled by 1) earning college credit at the 102-level or above; or 2) demonstrating proficiency via the SES foreign language proficiency examination. The SES writing intensive requirement is fulfilled by successfully completing two Loyola WI courses (max of one per semester). Writing intensive courses have a “W” in the section number.

Additional Undergraduate Graduation Requirements

All Undergraduate students are required to complete the University Core, at least one Engaged Learning course, and UNIV 101. SCPS students are not required to take UNIV 101. You can find more information in the University Requirements (https://catalog.luc.edu/undergraduate/university-requirements/) area.

Learning Outcomes

- Explain the physical, biological, and chemical structure and function of ecosystems.
• Examine the causes and consequences of environmental change at local to global scales.
• Apply scientific knowledge to evaluate policy, management, and other solutions that aim to enhance environmental sustainability.