

ENVIRONMENTAL SCIENCE: CONSERVATION AND RESTORATION ECOLOGY (BS)

Biodiversity at local, regional, and global scales currently faces unprecedented threats from pressures including climate change, invasive species, and habitat alteration. Our conservation and restoration program prepares tomorrow's leaders to develop and implement effective strategies to protect and restore natural ecosystems. Students explore ecological principles, how humans interact with and impact ecosystems, and methods of repairing environmental damage.

CURRICULUM

Students studying Conservation and Restoration develop a solid foundation in environmental science, environmental economics and policy, and the ways that society can effectively enhance biodiversity.

Code	Title	Hours
Core Curriculum		
ENVS 137	Foundations of Environmental Science I	3
BIOL 101	General Biology I	3
BIOL 111	General Biology I Lab	1
CHEM 160	Chemical Structure and Properties	3
CHEM 161	Chemical Structure and Properties Laboratory	1
BIOL 102	General Biology II	3
BIOL 112	General Biology II Lab	1
CHEM 180	Chemical Reactivity I	3
CHEM 181	Chemical Reactivity I Lab	1
ENVS 200	Environmental Careers and Professional Skills	1
ENVS 203	Environmental Statistics	3
ENVS 274	Chemistry of the Environment	3
ENVS 275	Chemistry of the Environment Lab	1
ENVS 280	Principles of Ecology	3
ENVS 286S	Principles of Ecology Lab	1
PLSC 392	Environmental Politics	3
ENVS 218	Biodiversity & Biogeography	3
ENVS 320	Conservation Biology	3
ENVS 321	Conservation Biology Lab	1
ENVS 330	Restoration Ecology	3
ENVS 331	Restoration Ecology Lab	1
ENVS 383	Human Dimensions of Conservation	3
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 283	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)	

Electives (p. 1)	9
See designated elective categories below	

Total Hours	69
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Electives

Code	Title	Hours
Society, Ethics, and Justice		
Select one of the following:		3
COMM 260	Environmental Journalism	
ENVS 204	Gender, Health & Environment	
ENVS 279 / HIST 279E	Climate and History	
ENVS 284	Environmental Justice	
ENVS 297 / HIST 297E	North American Environmental History	
ENVS 298	Special Topics (with SES approval)	
ENVS 338	Climate Change and Human Health	
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 383	Human Dimensions of Conservation	
ENVS 391	Environmental Research (with SES approval)	
ENVS 395	Environmental Internship (with SES approval)	
ENVS 398	Special Topics (with SES approval)	
ENVS 399	Directed Readings (with SES approval)	
COMM 101	Public Speaking & Critical Thinking	
COMM 277	Organizational Communication	
COMM 306	Environmental Advocacy	
COMM 322	Guerilla Media	
COMM 379	Digital Sustainability	
ENGL 288	Nature in Literature	

PHIL 287	Environmental Ethics
PSYC 277	Environmental Psychology
SOCL 226	Science, Technology, & Society
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 300	Introduction to Public Health
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 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 (with SES approval)
ENVS 395	Environmental Internship (with SES approval)
ENVS 398	Special Topics (with SES approval)
ENVS 399	Directed Readings (with SES approval)
ECON 328	Environmental Economics
GLST 305	Globalization and Environmental Sustainability
MGMT 201	Managing People and Organizations
PLSC 354	Global Environmental Politics

Environmental Science

Select one of the following: 3

ENVS 207	Plants and Civilization
ENVS 215 / BIOL 215	Ornithology
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 283	Environmental Sustainability
ENVS 298	Special Topics (with SES approval)
ENVS 319	Winter Ecology
ENVS 322	Invasive Species
ENVS 325	Sustainable Agriculture
ENVS 326	Agroecosystems

ENVS 327	Food Systems Analysis
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 385	Introduction to Global Health
ENVS 387	Principles of Ecotoxicology
ENVS 388	Applied Environmental Statistics
ENVS 389	Ecological Risk Assessment
ENVS 391	Environmental Research (with SES approval)
ENVS 395	Environmental Internship (with SES approval)
ENVS 398	Special Topics (with SES approval)
ENVS 399	Directed Readings (with SES approval)
ANTH 104	The Human Ecological Footprint
ANTH 303	People and Conservation
BIOL, CHEM, PHYS 300-level courses (with SES approval)	

Total Hours 9**Suggested Sequence of Courses**

The below sequence of courses is meant to be used as a suggested path for completing coursework. An individual student's completion of requirements depends on course offerings in a given term as well as the start term for a major or graduate study. Students should consult their advisor for assistance with course selection.

Course	Title	Hours
Year One		
Fall		
BIOL 101	General Biology I	3
BIOL 111	General Biology I Lab	1
CHEM 160	Chemical Structure and Properties	3
CHEM 161	Chemical Structure and Properties Laboratory	1
ENVS 137	Foundations of Environmental Science I	3
Hours		11
Spring		
BIOL 102	General Biology II	3
BIOL 112	General Biology II Lab	1
CHEM 180	Chemical Reactivity I	3
CHEM 181	Chemical Reactivity I Lab	1
ENVS 200	Environmental Careers and Professional Skills	1
ENVS 203	Environmental Statistics	3
Hours		12

Year Two**Fall**

ENVS 280	Principles of Ecology	3
ENVS 286S	Principles of Ecology Lab	1

Hours	4
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Spring

ENVS 274	Chemistry of the Environment	3
ENVS 275	Chemistry of the Environment Lab	1
ENVS 218	Biodiversity & Biogeography	3
or ENVS 320	or Conservation Biology	
or ENVS 321	or Conservation Biology Lab	
or ENVS 330	or Restoration Ecology	
or ENVS 331	or Restoration Ecology Lab	
or ENVS 383	or Human Dimensions of Conservation	

Justice & Ethics Choice	3
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Society, Ethics, & Justice Elective	3
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Hours	13
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Year Three**Fall**

Engaged Learning Choice	3
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Hours	3
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Spring

ENVS 335	Ecological Economics	3
or ECON 328	or Environmental Economics	

ENVS 218	Biodiversity & Biogeography	3
or ENVS 320	or Conservation Biology	
or ENVS 321	or Conservation Biology Lab	
or ENVS 330	or Restoration Ecology	
or ENVS 331	or Restoration Ecology Lab	
or ENVS 383	or Human Dimensions of Conservation	

Hours	7
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Year Four**Fall**

ENVS 218	Biodiversity & Biogeography	3
or ENVS 320	or Conservation Biology	
or ENVS 321	or Conservation Biology Lab	
or ENVS 330	or Restoration Ecology	
or ENVS 331	or Restoration Ecology Lab	
or ENVS 383	or Human Dimensions of Conservation	

PLSC 392	Environmental Politics	3
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Environmental Science Elective	3
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Hours	10
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Spring

Capstone Choice	3
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Policy, Economics, & Resource Management Elective	3
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Environmental Science Elective	3
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Hours	9
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Total Hours	69
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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. Nursing students in the Accelerated BSN program are not required to take core or UNIV 101. You can find more information in the University Requirements (<https://catalog.luc.edu/undergraduate/university-requirements/>) area.

LEARNING OUTCOMES

1. Explain fundamental connections among ecological processes that are the basis of unity and diversity of life.
2. Analyze ecological and societal data to apply best management practices in conservation and restoration ecology.
3. Synthesize the social, historical, economic, political, and biological causes, consequences, and solutions to our current biodiversity crisis.
4. Develop and express a personal philosophy that values protecting and restoring our global bicultural diversity and vital ecosystems.

SES Shared Learning Outcomes

All SES majors share the following Program Learning Objectives, in addition to their unique major-specific Program Learning Objectives:

1. Articulate the foundational principles of natural and social sciences and humanities essential to solving environmental problems.
2. Critically evaluate the accuracy and credibility of information relating to environmental topics.
3. Employ knowledge and skills to design and implement solutions that contribute to a just and sustainable world.
4. Exemplify the values of environmental and social justice through actions to care for our common home and one another.

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