

ENVIRONMENTAL SCIENCE/ ENVIRONMENTAL SCIENCE AND SUSTAINABILITY (BS/ MS)

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.

With our Accelerated Bachelor's/Master's Program, Loyola SES students can boost their professional credentials and save time and money by completing an undergraduate degree along with a master of science in environmental science and sustainability degree in as little as five years. The economic and academic benefits are substantial.

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.

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
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 369	Field Ornithology	
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		21
See designated elective categories below		
Total Hours		67

BS Electives

Code	Title	Hours
Society, Ethics, and Justice		
Select one of the following:		3
ENVS 204	Gender, Health & Environment	
ENVS 260 / COMM 260	Environmental Journalism	
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 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 215 / BIOL 215	Ornithology
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 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 323	Environmental Microbiology
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 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 21**Year 5**

The Environmental Science and Sustainability MS has the following requirements:

Code	Title	Hours
Required Courses		6
ENVS 401	Sustainable Systems - Natural Science Perspectives	
ENVS 402	Sustainable Systems - Social Science Perspectives	
Completion of One of Four Concentrations:		9-12
Environmental Law & Policy		
ENVS 410	Introduction to Environmental Law & Policy	
ENVS 411	Natural Resources and Land Use Law & Policy	
ENVS 412	Water Law & Policy	

ENVS 413	Energy Law & Policy
Geographic Information Systems	
ENVS 480	Introduction to Geographic Information Systems
ENVS 481	Advanced GIS Applications
ENVS 482	Remote Sensing
Sustainable Assessment and Planning	
ENVS 451	Introduction to Sustainability Concepts & Impacts
ENVS 452	Sustainability Assessment & Reporting I
ENVS 453	Sustainability Assessment & Reporting II
ENVS 454	Sustainability Plan Development & Reporting
Sustainable Business	
ENVS 433	Introduction to the Circular Economy
ENVS 435	Ecological Economics
ENVS 436	Design for Circular & Sustainable Business
ENVS 463	Sustainable Business Management
Electives (for a total of 30 credit hours with required courses)	12-15
Natural Science and Quantitative Courses	
	6
Students will take at least two courses from the following list of electives.	
ENVS 420	Conservation Biology
ENVS 422	Invasive Species
ENVS 425	Sustainable Agriculture
ENVS 426	Agroecosystems
ENVS 427	Food Systems Analysis
ENVS 430	Restoration Ecology
ENVS 435	Ecological Economics
ENVS 438	Climate Change and Human Health
ENVS 451	Introduction to Sustainability Concepts & Impacts
ENVS 452	Sustainability Assessment & Reporting I
ENVS 453	Sustainability Assessment & Reporting II
ENVS 480	Introduction to Geographic Information Systems
ENVS 481	Advanced GIS Applications
ENVS 482	Remote Sensing
ENVS 484	Conservation Economics
ENVS 487	Principles of Ecotoxicology
ENVS 488	Applied Environmental Statistics
ENVS 489	Ecological Risk Assessment
ENVS 491	Independent Environmental Research (upon approval)
ENVS 498	Special Topics (upon approval)
ENVS 498L	Special Topics with Lab (upon approval)
ENVS 499	Directed Readings (upon approval)
BIOL 495	Special Topics (Topic: Metagenomics)
BIOL 416	Limnology Lec/Lab
BIOL 418	Aquatic Insects Lecture & Laboratory
BIOL 470	Biostats & Exp Design Lec/Lab
MPBH 401	Environmental Health
MPBH 402	Public Health Practice and Management
MPBH 403	Introduction to Epidemiology
MPBH 404	Biostatistics for Health and Biological Science
MPBH 407	Public Health Policy: Concepts and Practice
MPBH 409	Biostatistics I

MPBH 412	Intro to Statistical Computing for Public Health
MPBH 414	Introduction to Global Health
MPBH 421	Biostatistics II
MPBH 423	Intermediate Epidemiology
MPP 401	Analytical Tools in Public Policy
MPP 402	Cost Benefit Analysis
MPP 403	Public Budget and Finance
MPP 405	Statistical Methods & Analysis for Public Policy I
MPP 406	Statistical Methods & Analysis Public Policy II
MPP 408	Political Feasibility Analysis
SOCL 414	Statistical Methods Analysis I
SOCL 415	Statistical Methods of Analysis II
STAT 403	SAS Program & Applied Statistics
STAT 407	Statistical Design
STAT 436	Topics in Biostatistics

Sustainable Society and Business Courses

Student may choose from courses focused on society's interaction with the environment: environmental law and policy, sustainable business management, and fostering sustainable societies.

ENVS 410	Introduction to Environmental Law & Policy
ENVS 411	Natural Resources and Land Use Law & Policy
ENVS 412	Water Law & Policy
ENVS 413	Energy Law & Policy
ENVS 432	Industrial Ecology
ENVS 433	Introduction to the Circular Economy
ENVS 436	Design for Circular & Sustainable Business
ENVS 454	Sustainability Plan Development & Reporting
ENVS 463	Sustainable Business Management
ENVS 464	Sustainability Management in the Global Context
ENVS 483	Human Dimensions of Conservation
ENVS 491	Independent Environmental Research (upon approval)
ENVS 498	Special Topics (upon approval)
ENVS 499	Directed Readings (upon approval)
MPBH 407	Public Health Policy: Concepts and Practice
MPP 400	Policy Design and Analysis
MPP 404	Public Policy Process
PSYC 460	Social Psychological Theory
PSYC 461	Attitude and Attitude Change
PSYC 486	Methods of Program Evaluation
SOCL 412	Qualitative Methods in Social Research
SOCL 446	Knowledge, Power & Expertise
SOCL 463	Sociology & Natural Environment

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. SPCS 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.

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.