

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.

Related Programs

Major

- Environmental Science (BS) (<https://catalog.luc.edu/undergraduate/environmental-sustainability/environmental-science/environmental-science-bs/>)

Minor

- Environmental Science Minor (<https://catalog.luc.edu/undergraduate/environmental-sustainability/environmental-science/environmental-science-minor/>)

Combined

- Environmental Science/Business (BS/MBA) (<https://catalog.luc.edu/undergraduate/accelerated-bachelors-masters-program/environmental-science-business-administration-bs-mba/>)
- Environmental Science/Digital Media and Storytelling (BS/MC) (<https://catalog.luc.edu/undergraduate/accelerated-bachelors-masters-program/environmental-science-digital-media-storytelling-bs-mc/>)

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.

The BS in Environmental Science can be taken without a concentration [66 credit hours] or with a chosen concentration in Conservation and Restoration Ecology [67 credit hours]; Environmental Health [69 credit hours]; Food Systems and Sustainable Agriculture [66 credit hours]; or Climate & Energy [70 credit hours]. During a student's senior year two classes per semester (12 credits total) can be taken at the Graduate level and count towards both the BS and the Master of Science and Environmental Sustainability, leaving 18 credits worth of coursework to be completed after the BS degree is completed, for a total of 30 credits for the Masters Degree.

Code	Title	Hours
BS Requirements		
<i>Core Curriculum</i>		
BIOL 101 & BIOL 111	General Biology I and General Biology I Lab	4
Students take one of the following sequences based on concentration:		
BIOL 102 & BIOL 112	General Biology II and General Biology II Lab ¹	4
PHYS 111 & 111L	College Physics I Lec / Dis and College Physics Laboratory I ²	4
CHEM 160	Chemical Structure and Properties	3
CHEM 161	Chemical Structure and Properties Laboratory	1
ENVS 137	Foundations of Environmental Science I	3
ENVS 200	Environmental Careers and Professional Skills	1
ENVS 203	Environmental Statistics	3
ENVS 274	Chemistry of the Natural Environment	3
ENVS 275	Chemistry of the Environment Lab	1
ENVS 276	Chemistry of Environmental Pollution	3
ENVS 280	Principles of Ecology	3
ENVS 286S	Principles of Ecology Lab	1
PLSC 392	Environmental Politics	3
<i>Justice and Ethics Choice</i>		
Select one of the following:		
ENVS 284	Environmental Justice	3
PHIL 287	Environmental Ethics	
THEO 204	Religious Ethics and the Ecological Crisis	
<i>Economics Choice</i>		
ENVS 335 or ECON 328	Ecological Economics Environmental Economics	3
<i>Engaged Learning Choice</i> ^{3,4}		
Select one of the following:		
ENVS 226	Science & Conservation of Freshwater Ecosystems	3
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 350C	Solutions to Environmental Problems: Climate Action	
ENVS 350F	Solutions to Environmental Problems: Food Systems ⁵	
ENVS 369	Field Ornithology	
ENVS 391	Environmental Research (with SES approval) ⁵	
ENVS 395	Environmental Internship (with SES approval) ⁵	
<i>Capstone Choice</i>		
Select one of the following:		
ENVS 390	Integrative Seminar	3
ENVS 391C	Independent Environmental Research (Capstone)	
ENVS 395C	Environmental Internship (Capstone)	
Concentration Courses and Electives (p. 2)		21-28

See designated elective categories below

MS Requirements		
<i>Required Courses</i>		
ENVS 401	Sustainable Systems - Natural Science Perspectives	3
ENVS 402	Sustainable Systems - Social Science Perspectives	3
<i>Choose One of Four Concentrations</i>		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	
ENVS 486	Python Programming for GIS	
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 (p. 5) ⁶		12-15
Total Hours		96-100

¹ Students with the Conservation and Restoration Ecology, Environmental Health, Food Systems and Sustainable Agriculture, and without concentration must take BIOL 102 and BIOL 112.

² Students in the Climate and Energy Concentration must take PHYS 111 and PHYS 111L. Students in this concentration also take an additional PHYS course outlined in the Concentration requirements.

³ Students in the Food Systems and Sustainable Agriculture Concentration and the Climate and Energy Concentration have limited options to satisfy the Engaged Learning requirement.

⁴ Students in the Climate and Energy Concentration must take ENVS 273 for the Engaged Learning Requirement within the major. This requirement is outlined in the Concentration requirements.

⁵ Students in the Food Systems and Sustainable Agriculture Concentration may take this course to satisfy the Engaged Learning Requirement for the major.

⁶ Students choosing the Geographical Information Systems concentration must take an additional elective course to meet the total credit hours for the MS.

Concentration Requirements and Elective Course Options

Environmental Science (Without Concentration)

Code	Title	Hours
Electives		
One (1) course in Society, Ethics, and Justice Electives		3
One (1) course in Policy, Economics, and Resource Management Electives		3
Five (5) courses in Environmental Science Electives, at least three (3) of which must be at 300-level		15
Total Hours		21

Environmental Science: Conservation and Restoration Ecology Concentration

Code	Title	Hours
Required Courses		
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
Electives		
One (1) course in Society, Ethics, and Justice Electives		3
One (1) course in Policy, Economics, and Resource Management Electives		3
One (1) course in Environmental Science Electives		3
Total Hours		23

Environmental Science: Environmental Health Concentration

Code	Title	Hours
Required Courses		
ENVS 300	Introduction to Public Health	3
ENVS 301	Environmental Health	3
ENVS 303	Introduction to Epidemiology	3
Electives		
One (1) course in Environmental Health and Society Electives		3
Four (4) courses in Environmental Science Electives		12
Total Hours		24

Environmental Science: Food Systems and Sustainable Agriculture Concentration

Code	Title	Hours
Required Courses		
ENVS 207	Plants and Civilization	3
ENVS 223	Soil Ecology	3
ENVS 325	Sustainable Agriculture	3
Food Systems and Sustainable Agriculture Required Choice		
Select one of the following:		3
ENVS 230	Feeding the Planet: Global Perspectives on Sustainability, Culture and Food	

ENVS 326	Agroecosystems	
ENVS 327	Food Systems Analysis	
ENVS 350F	Solutions to Environmental Problems: Food Systems	
Electives		
One (1) course in Society, Ethics, and Justice Electives		3
One (1) course in Policy, Economics, and Resource Management Electives		3
One (1) course in Environmental Science Electives		3
Total Hours		21

Environmental Science: Climate and Energy Concentration

Code	Title	Hours
Required Physics Core Course		
PHYS 112	College Physics II Lec/Disc	3
PHYS 112L	College Physics Lab II	1
Required Climate and Energy Courses		
ENVS 224	Climate & Climate Change	3
ENVS 273	Energy and the Environment ¹	3
ENVS 313	Energy Law & Policy	3
ENVS 316	Energy and Power Systems	3
ENVS 324	Climate Science	3
Electives		
One (1) course in Business, Economics, & Management Electives		3
One (1) course in Communication Electives		3
One (1) course in Methods & Analysis Electives		3
Total Hours		28

¹ This course satisfies the Engaged Learning requirement.

Electives

Society, Ethics, and Justice Electives

Code	Title	Hours
COMM 101	Public Speaking & Critical Thinking	3
COMM 277	Organizational Communication	3
COMM 306	Environmental Advocacy	3
COMM 322	Guerilla Media	3
COMM 379	Digital Sustainability ¹	3
ENGL 288	Nature in Literature	3
ENVS 204	Gender, Health & Environment	3
ENVS 230	Feeding the Planet: Global Perspectives on Sustainability, Culture and Food	3
ENVS 260 / COMM 260	Environmental Journalism	3
ENVS 279 / HIST 279E	Climate and History	3
ENVS 284	Environmental Justice	3
ENVS 285	Eco-spirituality	3
ENVS 297 / HIST 297E	North American Environmental History	3
ENVS 298	Special Topics (with SES approval)	1-12
ENVS 338	Climate Change and Human Health	3

ENVS 350A	Solutions to Environmental Problems: Water	3
ENVS 350C	Solutions to Environmental Problems: Climate Action	3
ENVS 350F	Solutions to Environmental Problems: Food Systems	3
ENVS 383	Human Dimensions of Conservation	3
ENVS 391	Environmental Research (with SES approval)	1-3
ENVS 395	Environmental Internship (with SES approval)	3
ENVS 398	Special Topics (with SES approval)	3
ENVS 399	Directed Readings (with SES approval)	1-3
PHIL 287	Environmental Ethics	3
PSYC 277	Environmental Psychology	3
SOCL 226	Science, Technology, & Society	3
SOCL 252	Global Inequalities	3
SOCL 272	Environmental Sociology	3
SOCL 276	The Sociology and Politics of Food	3
SOCL 278	Global Health	3
THEO 204	Religious Ethics and the Ecological Crisis	3
THEO 344	Theology and Ecology	3

¹ For students with the Conservation and Restoration Ecology Concentration or without a Concentration.

Policy, Economics, and Resource Management Electives

Code	Title	Hours
COMM 379	Digital Sustainability ¹	3
ECON 328	Environmental Economics	3
ENVS 230	Feeding the Planet: Global Perspectives on Sustainability, Culture and Food	3
ENVS 298	Special Topics (with SES approval)	1-12
ENVS 300	Introduction to Public Health	3
ENVS 310	Introduction to Environmental Law & Policy	3
ENVS 311	Natural Resources and Land Use Law & Policy	3
ENVS 312	Water Law & Policy	3
ENVS 313	Energy Law & Policy	3
ENVS 316	Energy and Power Systems	3
ENVS 327	Food Systems Analysis	3
ENVS 333	Introduction to the Circular Economy	3
ENVS 335	Ecological Economics	3
ENVS 336	Design for Circular & Sustainable Business	3
ENVS 338	Climate Change and Human Health	3
ENVS 351	Introduction to Sustainability Concepts & Impacts ¹	3
ENVS 363	Sustainable Business Management	3
ENVS 383	Human Dimensions of Conservation	3
ENVS 384	Conservation Economics	3
ENVS 389	Ecological Risk Assessment	3
ENVS 391	Environmental Research (with SES approval)	1-3
ENVS 395	Environmental Internship (with SES approval)	3
ENVS 398	Special Topics (with SES approval)	3
ENVS 399	Directed Readings (with SES approval)	1-3
GLST 305	Globalization and Environmental Sustainability	3

MGMT 201	Managing People and Organizations	3
PLSC 354	Global Environmental Politics	3

¹ For students in the Food Systems and Sustainable Agriculture Concentration only.

Environmental Science Electives

Code	Title	Hours
Environmental Science Electives		
ANTH 104	The Human Ecological Footprint	3
ANTH 303	People and Conservation	3
ENVS 204	Gender, Health & Environment ³	3
ENVS 207	Plants and Civilization ⁴	3
ENVS 215 / BIOL 215	Ornithology ¹	3
ENVS 218	Biodiversity & Biogeography ³	3
ENVS 223	Soil Ecology ³	3
ENVS 224	Climate & Climate Change	3
ENVS 226	Science & Conservation of Freshwater Ecosystems	3
ENVS 267	Bird Conservation and Ecology ⁵	3
ENVS 273	Energy and the Environment ⁵	3
ENVS 278	Hydrology ⁶	3
ENVS 283	Environmental Sustainability	3
ENVS 298	Special Topics (with SES approval)	1-12
ENVS 300	Introduction to Public Health ⁷	3
ENVS 301	Environmental Health ⁷	3
ENVS 303	Introduction to Epidemiology ⁷	3
ENVS 320	Conservation Biology ⁷	3
ENVS 322	Invasive Species	3
ENVS 323	Environmental Microbiology ³	3
ENVS 324	Climate Science	3
ENVS 325	Sustainable Agriculture ⁴	3
ENVS 326	Agroecosystems	3
ENVS 327	Food Systems Analysis	3
ENVS 330	Restoration Ecology ³	3
ENVS 338	Climate Change and Human Health ⁶	3
ENVS 340	Natural History of Belize ⁵	3
ENVS 345	Conservation and Sustainability of Neotropical Ecosystems ⁵	3
ENVS 350A	Solutions to Environmental Problems: Water	3
ENVS 350C	Solutions to Environmental Problems: Climate Action	3
ENVS 350F	Solutions to Environmental Problems: Food Systems	3
ENVS 367	Mammalogy	3
ENVS 369	Field Ornithology ⁵	3
ENVS 380	Introduction to Geographic Information Systems	3
ENVS 381	Advanced GIS Applications	3
ENVS 382	Remote Sensing	3
ENVS 383	Human Dimensions of Conservation ⁷	3
ENVS 384	Conservation Economics ²	3
ENVS 385	Introduction to Global Health	3
ENVS 386	Python Programming for GIS	3

ENVS 387	Principles of Ecotoxicology	3
ENVS 389	Ecological Risk Assessment	3
ENVS 391	Environmental Research (with SES approval)	1-3
ENVS 395	Environmental Internship (with SES approval)	3
ENVS 398	Special Topics (with SES approval)	3
ENVS 399	Directed Readings (with SES approval)	1-3
BIOL, CHEM, PHYS 300-level courses	(with SES approval)	

¹ For students with the Food and Sustainable Agriculture Concentration, the Environmental Health Concentration, or without a Concentration.

² For students in the Environmental Health Concentration only.

³ For students with the Conservation and Restoration Ecology Concentration or without a Concentration.

⁴ For students in the Food Systems and Sustainable Agriculture Concentration only.

⁵ For students with the Conservation and Restoration Ecology Concentration, the the Environmental Health Concentration, or without a Concentration.

⁶ For students with the Food Systems and Sustainable Agriculture Concentration or without a Concentration.

⁷ For students without a Concentration only.

Environmental Health and Society Elective (Environmental Health only)

Code	Title	Hours
COMM 101	Public Speaking & Critical Thinking	3
COMM 260	Environmental Journalism	3
COMM 277	Organizational Communication	3
COMM 306	Environmental Advocacy	3
COMM 379	Digital Sustainability	3
ECON 328	Environmental Economics	3
ENGL 288	Nature in Literature	3
ENVS 204	Gender, Health & Environment	3
ENVS 230	Feeding the Planet: Global Perspectives on Sustainability, Culture and Food	3
ENVS 279	Climate and History	3
ENVS 284	Environmental Justice	3
ENVS 285	Eco-spirituality	3
ENVS 297	North American Environmental History	3
ENVS 298	Special Topics (with SES approval)	1-12
ENVS 310	Introduction to Environmental Law & Policy	3
ENVS 311	Natural Resources and Land Use Law & Policy	3
ENVS 312	Water Law & Policy	3
ENVS 313	Energy Law & Policy	3
ENVS 335	Ecological Economics	3
ENVS 338	Climate Change and Human Health	3
ENVS 340	Natural History of Belize	3
ENVS 350A	Solutions to Environmental Problems: Water	3
ENVS 350C	Solutions to Environmental Problems: Climate Action	3
ENVS 350F	Solutions to Environmental Problems: Food Systems	3
ENVS 363	Sustainable Business Management	3
ENVS 383	Human Dimensions of Conservation	3
ENVS 389	Ecological Risk Assessment	3

ENVS 391	Environmental Research (with SES approval)	1-3	ENVS 411	Natural Resources and Land Use Law & Policy	3
ENVS 395	Environmental Internship (with SES approval)	3	ENVS 412	Water Law & Policy	3
ENVS 398	Special Topics (with SES approval)	3	ENVS 413	Energy Law & Policy	3
ENVS 399	Directed Readings (with SES approval)	1-3	ENVS 420	Conservation Biology	3
MGMT 201	Managing People and Organizations	3	ENVS 422	Invasive Species	3
PHIL 287	Environmental Ethics	3	ENVS 423	Environmental Microbiology	3
PLSC 354	Global Environmental Politics	3	ENVS 425	Sustainable Agriculture	3
PSYC 277	Environmental Psychology	3	ENVS 426	Agroecosystems	3
SOCL 226	Science, Technology, & Society	3	ENVS 427	Food Systems Analysis	3
SOCL 252	Global Inequalities	3	ENVS 430	Restoration Ecology	3
SOCL 272	Environmental Sociology	3	ENVS 433	Introduction to the Circular Economy	3
SOCL 276	The Sociology and Politics of Food	3	ENVS 435	Ecological Economics	3
SOCL 278	Global Health	3	ENVS 436	Design for Circular & Sustainable Business	3
THEO 204	Religious Ethics and the Ecological Crisis	3	ENVS 438	Climate Change and Human Health	3
THEO 344	Theology and Ecology	3	ENVS 451	Introduction to Sustainability Concepts & Impacts	3

Business, Economics, & Management (Climate and Energy only)

Code	Title	Hours
ENTR 201	Essentials of Entrepreneurship	3
ENVS 336	Design for Circular & Sustainable Business	3
ENVS 363	Sustainable Business Management	3
MGMT 201	Managing People and Organizations	3
SCMG 232	Introduction to Supply Chain Management	3

Communication (Climate and Energy only)

Code	Title	Hours
COMM 101	Public Speaking & Critical Thinking	3
COMM 103	Business & Professional Speaking	3
COMM 236	Persuasive Presentations	3
COMM 237	Small Group Communication	3
COMM 260	Environmental Journalism	3
COMM 268	Persuasion	3
COMM 277	Organizational Communication	3
COMM 306	Environmental Advocacy	3
ENVS 350C	Solutions to Environmental Problems: Climate Action	3

Methods & Analysis (Climate and Energy only)

Code	Title	Hours
DSCI 101	Fundamentals of Modern Data Science with R	3
ENVS 380	Introduction to Geographic Information Systems	3
ENVS 382	Remote Sensing	3
ENVS 386	Python Programming for GIS	3
SOCL 206	Principles of Social Research	3
SOCL 302	Qualitative Research	3
STAT 303	SAS Programming & Applied Statistics	3

MS Electives

Code	Title	Hours
BIOL 416	Limnology Lec/Lab	4
BIOL 418	Aquatic Insects Lecture & Laboratory	4
BIOL 470	Biostats & Exp Design Lec/Lab	4
BIOL 495	Special Topics (Topic: Metagenomics)	1-4
ENVS 410	Introduction to Environmental Law & Policy	3

ENVS 411	Natural Resources and Land Use Law & Policy	3
ENVS 412	Water Law & Policy	3
ENVS 413	Energy Law & Policy	3
ENVS 420	Conservation Biology	3
ENVS 422	Invasive Species	3
ENVS 423	Environmental Microbiology	3
ENVS 425	Sustainable Agriculture	3
ENVS 426	Agroecosystems	3
ENVS 427	Food Systems Analysis	3
ENVS 430	Restoration Ecology	3
ENVS 433	Introduction to the Circular Economy	3
ENVS 435	Ecological Economics	3
ENVS 436	Design for Circular & Sustainable Business	3
ENVS 438	Climate Change and Human Health	3
ENVS 451	Introduction to Sustainability Concepts & Impacts	3
ENVS 452	Sustainability Assessment & Reporting I	3
ENVS 453	Sustainability Assessment & Reporting II	3
ENVS 454	Sustainability Plan Development & Reporting	3
ENVS 463	Sustainable Business Management	3
ENVS 467	Mammalogy	3
ENVS 480	Introduction to Geographic Information Systems	3
ENVS 481	Advanced GIS Applications	3
ENVS 482	Remote Sensing	3
ENVS 483	Human Dimensions of Conservation	3
ENVS 484	Conservation Economics	3
ENVS 486	Python Programming for GIS	3
ENVS 487	Principles of Ecotoxicology	3
ENVS 489	Ecological Risk Assessment	3
ENVS 491	Independent Environmental Research (upon approval)	1-4
ENVS 498	Special Topics (upon approval)	1-12
ENVS 498L	Special Topics with Lab (upon approval)	1-4
ENVS 499	Directed Readings (upon approval)	1-3
MPBH 401	Environmental Health	3
MPBH 402	Public Health Practice and Management	3
MPBH 403	Introduction to Epidemiology	3
MPBH 404	Biostatistics for Health and Biological Science	3
MPBH 407	Public Health Policy: Concepts and Practice	3
MPBH 409	Biostatistics I	3
MPBH 412	Intro to Statistical Computing for Public Health	2
MPBH 414	Introduction to Global Health	3
MPBH 421	Biostatistics II	3
MPBH 423	Intermediate Epidemiology	3
MPP 400	Policy Design and Analysis	3
MPP 401	Analytical Tools in Public Policy	3
MPP 402	Cost Benefit Analysis	3
MPP 403	Public Budget and Finance	3
MPP 404	Public Policy Process	3
MPP 405	Statistical Methods & Analysis for Public Policy I	3
MPP 406	Statistical Methods & Analysis Public Policy II	3
MPP 408	Political Feasibility Analysis	3
PSYC 460	Social Psychological Theory	3

PSYC 461	Attitude and Attitude Change	3
PSYC 486	Methods of Program Evaluation	3
SOCL 412	Qualitative Methods in Social Research	3
SOCL 414	Statistical Methods Analysis I	3
SOCL 415	Statistical Methods of Analysis II	3
SOCL 446	Knowledge, Power & Expertise	3
SOCL 463	Sociology & Natural Environment	3
STAT 403	SAS Program & Applied Statistics	3
STAT 407	Statistical Design	3
STAT 436	Topics in Biostatistics	3

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.

Suggested Sequence of Courses - Professional Track

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
Environmental Science Elective		3
Hours		7
Spring		
Justice & Ethics Choice		3
Society, Ethics, & Justice Elective		3
Hours		6
Year Three		
Fall		
ENVS 274	Chemistry of the Natural Environment	3
ENVS 275	Chemistry of the Environment Lab	1

Environmental Science 300 Level Elective	3	
Hours		7

Spring		
ENVS 335	Ecological Economics	3
or ECON 328	or Environmental Economics	
PLSC 392	Environmental Politics	3
Hours		6

Year Four		
Fall		
Engaged Learning Choice		3
400 Level Environmental Science Elective		3
400 Level Environmental Science Elective		3
Hours		9

Spring		
Capstone Choice		3
400 Level Policy, Economics, & Resource Management Elective		3
400 Level Environmental Science Elective		3
Hours		9

Year Five		
Fall		
ENVS 402	Sustainable Systems - Social Science Perspectives	3
400 Level Required Concentration Course		
400 Level Required Concentration Course		
Hours		3

Spring		
ENVS 401	Sustainable Systems - Natural Science Perspectives	3
400 Level Required Concentration Course		3
400 Level Required Concentration Course		3
Hours		9

Total Hours 79

Suggested Sequence of Courses - Research Track

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
Environmental Science Elective		3
Hours		7

Spring

Justice & Ethics Choice		3
Society, Ethics, & Justice Elective		3
Hours		6

Year Three**Fall**

ENVS 274	Chemistry of the Natural Environment	3
ENVS 275	Chemistry of the Environment Lab	1
Environmental Science 300 Level Elective		3
Hours		7

Spring

ENVS 335 or ECON 328	Ecological Economics or Environmental Economics	3
PLSC 392	Environmental Politics	3
Hours		6

Year Four**Fall**

Engaged Learning Choice		3
ENVS 402	Sustainable Systems - Social Science Perspectives	3
400 Level Environmental Science Elective		3
Hours		9

Spring

Capstone Choice		3
ENVS 401	Sustainable Systems - Natural Science Perspectives	3
400 Level Environmental Science Elective		3
Hours		9

Year Five**Fall**

ENVS 496	Research	3-12
400 Level Required Concentration Course		3
400 Level Required Concentration Course		3
Hours		9

Spring

ENVS 496	Research	3-12
400 Level Required Concentration Course		3
400 Level Required Concentration Course		3
Hours		9
Total Hours		85

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. 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

- Explain the physical, biological, and chemical structure and function of ecosystems. [BS - no concentration]
- Examine the causes and consequences of environmental change at local to global scales. [BS - no concentration]
- Apply scientific knowledge to evaluate policy, management, and other solutions that aim to enhance environmental sustainability. [BS - no concentration]
- Create an action plan for leading a professional and personal life that promotes environmental sustainability. [BS - no concentration]
- Articulate the foundational principles of natural and social sciences and humanities essential to solving environmental problems. [both no concentration and all concentrations]
- Critically evaluate the accuracy and credibility of information relating to environmental topics. [both no concentration and all concentrations]
- Employ knowledge and skills to design and implement solutions that contribute to a just and sustainable world. [both no concentration and all concentrations]
- Exemplify the values of environmental and social justice through actions to care for our common home and one another. [both no concentration and all concentrations]
- Explain fundamental connections among ecological processes that are the basis of unity and diversity of life. [Conservation and Restoration Ecology concentration]
- Analyze ecological and societal data to apply best management practices in conservation and restoration ecology. [Conservation and Restoration Ecology concentration]
- Synthesize the social, historical, economic, political, and biological causes, consequences, and solutions to our current biodiversity crisis. [Conservation and Restoration Ecology concentration]
- Develop and express a personal philosophy that values protecting and restoring our global bicultural diversity and vital ecosystems. [Conservation and Restoration Ecology concentration]
- Examine the sources of environmental degradation and their impacts on health. [Environmental Health concentration]
- Apply the tools of public health to characterize the impacts on community health using a planetary health perspective. [Environmental Health concentration]
- Integrate environmental regulatory policies to evaluate the health impacts at local and global scales. [Environmental Health concentration]

- Incorporate critical public health and environmental health justice perspectives into environmental and human dimensions. [Environmental Health concentration]
- Explain the components of food systems and their complex interactions across spatial and temporal scales. [Food Systems and Sustainable Agriculture concentration]
- Articulate the physical, psychological, cultural, and spiritual significance of food to individual and community wellbeing. [Food Systems and Sustainable Agriculture concentration]
- Using multiple methods of analysis, evaluate the environmental and equity impacts of different food system practices to reveal points of leverage for social-ecological change. [Food Systems and Sustainable Agriculture concentration]
- Engage knowledge, skills, and values through experiences that advance sustainability, resilience, and justice within food systems. [Food Systems and Sustainable Agriculture concentration]
- Understand the fundamental concepts of climate science and the impacts of climate change on society and the natural environment. [Climate and Energy concentration]
- Assess the state of energy production, consumption, and the deployment of sustainable technologies as part of a just energy transition. [Climate and Energy concentration]
- Evaluate the role of governmental policy and regulation in solving climate and energy related problems. [Climate and Energy concentration]
- Apply techniques from both the natural and social sciences to design practical and innovative solutions to contemporary climate and energy issues. [Climate and Energy concentration]
- Deepen your understanding of complex socio-ecological systems and their connection with sustainable development goals. [MS]
- Increase your ability to make accurate and ethical evidence-based decisions from scientific literature. [MS]
- Expand your capacity to communicate environmental science and sustainability issues to the scientific community, professional colleagues, policy makers, and the general public. [MS]
- Demonstrate competence of in-depth knowledge and skills through completion of an original research project and thesis. [MS]

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.