

ENVIRONMENTAL SCIENCE: ENVIRONMENTAL HEALTH/ PUBLIC HEALTH (BS/MPH)

Loyola's School of Communication, in partnership with the School of Environmental Sustainability, will offer a new program that will enable students to earn an undergraduate and graduate degree in environmental communication in five years.

The new 4+1 program will allow SOC students to earn their undergraduate degree in their declared major, plus a master's degree in Environmental Science and Sustainability.

Similarly, SES students will earn their undergraduate degree in their declared major, while also earning a master's degree from the SOC in either the Digital Media and Storytelling or Global Strategic Communication graduate programs.

The School of Communication and School of Environmental Sustainability spent two years developing this unique 4+1 program, joining only a handful of universities across the nation offering such a dual degree. The new program will begin in Fall 2022.

The two schools developed the 4+1 program to train environmental scientists to be better communicators, and communication professionals to better understand environmental science.

While environmental scientists are trained to investigate, analyze data and interpret results, they are not taught how to communicate their results and conclusions in ways that are readily accessible to the general public, CEOs, or legislators.

Equally, while journalists, filmmakers and television producers may have the skills to tell compelling stories, they often lack the scientific background to understand and properly relate the impact of climate change, pollution, and loss of biodiversity.

For students in the School of Communication, the 4+1 program will help deepen their understanding of complex socio-ecological issues and their connection with sustainable development goals, while also expanding their capacity to communicate environmental science and sustainability issues to the world. Such a program can help develop better-informed journalists, documentary filmmakers, television, radio and podcast producers, public relations and advertising professionals, and social media specialists.

For students in the School of Environmental Sustainability, the 4+1 program will help them with writing, public speaking, conference presentations, television and radio interviews, and social media messaging.

These 4+1 programs are uniquely applied and strongly interdisciplinary. They integrate basic science concepts, communication theory and practice, and socio-cultural dimensions to cultivate the interdisciplinary problem-solving and communication skills necessary for developing sustainable solutions. The goals of these programs are to:

- Educate students across the sciences, social sciences and humanities, providing knowledge and interdisciplinary perspectives needed to effectively address complex environmental problems

through grounding in solid scientific understanding of ecosystem operation.

- Develop skills in environmental and sustainability sciences including GIS, sustainability tracking, and environmental communications as well as important professional skills, such as interdisciplinary thinking, systems thinking, research design, data collection, data analysis, research ethics, technical writing, and communication.
- Improve communication skills by teaching students how to tell stories through enhanced speaking and presentation methods, better writing, video production, recording podcasts, developing blogs and social media.
- Prepare students for advancement in careers in the public and private sectors, including in government agencies, consulting firms, media organizations, businesses, and not-for-profit organizations.

For more information, email: LoyolaSOC@luc.edu

CURRICULUM

Students studying Environmental Health develop a solid foundation in environmental science, environmental economics and policy, and the societal issues associated with environmental degradation.

Code	Title	Hours
BS Requirements		
<i>Core Curriculum</i>		
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 300	Introduction to Public Health	3
ENVS 301	Environmental Health	3
ENVS 303	Introduction to Epidemiology	3
<i>Justice and Ethics Choice</i>		
Select one of the following:		3
ENVS 284	Environmental Justice	
PHIL 287	Environmental Ethics	
THEO 204	Religious Ethics and the Ecological Crisis	
<i>Economics Choice</i>		
ENVS 335	Ecological Economics	3
or ECON 328	Environmental Economics	
<i>Engaged Learning Choice</i>		
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 15

See designated elective categories below

MPH Core Courses

MPBH 400	Determinants of Population Health	3
MPBH 402	Public Health Practice and Management	3
MPBH 403	Introduction to Epidemiology	3
MPBH 404	Biostatistics for Health and Biological Science	
or MPBH 409	Biostatistics I	
MPBH 407	Public Health Policy: Concepts and Practice	3
MPBH 499	Public Health in Action	3

MPH Track-Specific Curricula 15

Students accepted into this program take three or four graduate-level MPH courses during their senior year, including:

- MPBH 400 Determinants of Population Health
- MPBH 402 Public Health Practice and Management
- MPBH 407 Public Health Policy: Concepts and Practice

Plus one of four electives:

- Environmental Health
- Introduction to Global Health
- Health Impact Assessment
- Introduction to Geographic Information Systems.

BS/MS in Environmental Health/MPH students complete the remainder of their MPH curriculum (<https://catalog.luc.edu/graduate-professional/health-sciences/master-public-health-mph/>) within approximately 12 months after their senior year.

BS Electives

Code	Title	Hours
Environmental Health and Society		
Select one of the following:		3
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 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 335	Ecological Economics	
ENVS 338	Climate Change and Human Health	
ENVS 340	Natural History of Belize	
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 363	Sustainable Business Management	
ENVS 383	Human Dimensions of Conservation	
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)	
COMM 101	Public Speaking & Critical Thinking	
COMM 260	Environmental Journalism	
COMM 277	Organizational Communication	
COMM 306	Environmental Advocacy	
COMM 379	Digital Sustainability	
ECON 328	Environmental Economics	
ENGL 288	Nature in Literature	
MGMT 201	Managing People and Organizations	
PHIL 287	Environmental Ethics	
PLSC 354	Global Environmental Politics	
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	

Environmental Science Electives

Select four of the following: 12

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 283	Environmental Sustainability	

ENVS 298	Special Topics (with SES approval)
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 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 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 15

MPH Track-Specific Curricula

Epidemiology

This hybrid program combines online and evening classes. Epidemiology is the basic science of public health: it helps us understand the causes of and solutions to diseases. This track equips students to design, conduct, analyze, and interpret population health research, while they learn the basic principles of all public health disciplines.

Code	Title	Hours
MPBH 412	Intro to Statistical Computing for Public Health	2
MPBH 421	Biostatistics II	3
MPBH 423	Intermediate Epidemiology	3
MPBH 427	Introduction to Correlated Data Analysis	1
MPBH 431	Grant Writing	3
Choose One Research Methods Course from the following:		
MPBH 413	The Epidemiology of Obesity: An Energy Balance Perspective	3
MPBH 414	Introduction to Global Health	
MPBH 433	Clinical Trials	
MPBH 434	Systematic Review and Meta-Analysis	

Total Hours 15

Global Health Equity

This concentration is a hybrid program of online and evening classes. Study the health of global populations with the ultimate goal of

identifying and eliminating structures and practices of inequity and injustice to advance health equity for individuals and populations.

Code	Title	Hours
MPBH 414	Introduction to Global Health	3
MPBH 417	Global Maternal & Child Health	3
MPBH 422	Population Health Planning & Management	3
MPBH 431	Grant Writing	3
Choose one of the following: ¹		3
BEHL 407	Social Determinants of Health and Bioethics	
BEHL 432	Global Bioethics	
Total Hours		15

¹ Students may choose an elective course not on this list with Track Director approval.

Public Health Policy and Management

This concentration can be completed entirely online, and also can be taken with in-person courses. This curriculum studies the organization, structure, and delivery of health-related services, and associated population health outcomes. Students may customize their academic focus in either public health policy, administration, or both.

Code	Title	Hours
MPBH 416	Health Services Research Methods	3
MPBH 425	Policy Analysis	3
Choose one of the following:		3
BEHL 402	Justice & Health Care	
BEHL 404	Biomedical Ethics and Law	
BEHL 407	Social Determinants of Health and Bioethics	
BEHL 411	Public Health Ethics	
BEHL 412	Organizational Ethics: Business, Professionalism, and Justice	
BEHL 418	Advancing Health Equity Practice	
BEHL 432	Global Bioethics	
Choose two of the following:		6
<i>Policy-oriented</i>		
MPBH 420	Public Health Law: Theories and Cases	
MPBH 424	Health Economics and Healthcare Financing	
<i>Management-oriented</i>		
MPBH 422	Population Health Planning & Management	
CMAN 533	Fiscal Management in Health Care Organizations	
Total Hours		15

Guidelines for Accelerated Bachelor's/Master's Programs

Terms

- **Accelerated Bachelor's/Master's programs:** In this type of program, students share limited credits between their undergraduate and graduate degrees to facilitate completion of both degrees.
- **Shared credits:** Graduate level credit hours taken during the undergraduate program and then applied towards graduate program requirements will be referred to as Shared credits.

Admission Requirements

Accelerated Bachelor's/Master's programs are designed to enhance opportunities for advanced training for Loyola's undergraduates. Admission to these programs must be competitive and will depend upon a positive review of credentials by the program's admissions committee. Accordingly, the admission requirements for these programs may be higher than those required if the master's degree were pursued entirely after the receipt of a bachelor's degree. That is, programs may choose to have more stringent admissions requirements in addition to those minimal requirements below.

Requirements:

- Declared appropriate undergraduate major,
- By the time students begin taking graduate courses as an undergraduate, the student has completed approximately 90 credit hours, or the credit hours required in a program that is accredited by a specialty organization,¹
- A minimum cumulative GPA for coursework at Loyola that is at or above the program-specific requirements, a minimum major GPA that is at or above the program-specific requirements, and/or appropriate designated coursework for evaluation of student readiness in their discipline.²

Students not eligible for the Accelerated Bachelor's/Master's program (e.g., students who have not declared the appropriate undergraduate major) may apply to the master's program through the regular admissions process. Students enrolled in an Accelerated Bachelor's/Master's program who choose not to continue to the master's degree program upon completion of the bachelor's degree will face no consequences.³

Ideally, a student will apply for admission (or confirm interest in proceeding towards the graduate degree in opt-out programs) as they approach 90 credit hours. Programs are encouraged to begin advising students early in their major so that they are aware of the program and, if interested, can complete their bachelor's degree requirements in a way that facilitates completion of the program. Once admitted as an undergraduate, Program Directors should ensure that students are enrolled using the plan code associated with the Accelerated Bachelor's/Master's program. Using the plan code associated with the Accelerated Bachelor's/Master's program will ensure that students may be easily identified as they move through the program. Students will not officially matriculate into the master's degree program and be labeled as a graduate student by the university, with accompanying changes to tuition and Financial Aid (see below), until the undergraduate degree has been awarded. Once admitted to the graduate program, students must meet the academic standing requirements of their graduate program as they complete the program curriculum.

¹ Programs that have specialized accreditation will adhere to the admissions criteria provided by, or approved by, their specialized accreditors.

² The program will identify appropriate indicators of student readiness for graduate coursework (e.g., high-level performance in 300 level courses). Recognizing differences between how majors are designed, we do not specify a blanket requirement.

³ If students choose not to enroll in the Accelerated Bachelor's/Master's program, they still must complete all of the standard requirements associated with the undergraduate degree (e.g., a capstone).

Curriculum

Level and progression of courses. The Accelerated Bachelor's/Master's programs are designed to be competitive and attractive to our most capable students. Students admitted to Accelerated Bachelor's/Master's programs should be capable of meeting graduate level learning outcomes. Following guidance from the Higher Learning Commission, only courses taken at the 400 level or higher (including 300/400 level courses taken at the 400 level) will count toward the graduate program.^{1,2} Up to 50% of the total graduate level credit hours, required in the graduate program, may come from 300/400 level courses where the student is enrolled in the 400 level of the course. Further, at least 50% of the credit hours for the graduate program must come from courses that are designed for and restricted to graduate students who have been admitted to a graduate program at Loyola (e.g., enrolled in plan code that indicates the Accelerated Bachelor's/Master's program, typically ending with the letter "D").³

In general, graduate level coursework should not be taken prior to admission into the Accelerated Bachelor's/Master's program. Exceptions may be granted for professional programs where curriculum for the Accelerated Bachelor's/Master's program is designed to begin earlier. On the recommendation of the program's Graduate Director, students may take one of their graduate level courses before they are admitted to the Accelerated Bachelor's/Master's program if they have advanced abilities in their discipline and course offerings warrant such an exception.⁴ Undergraduate degree requirements outside of the major are in no way impacted by admission to an Accelerated Bachelor's/Master's program.⁵

Shared credits. Undergraduate courses (i.e., courses offered at the 300 level or below) cannot be counted as shared credits nor count towards the master's degree. Up to 50% of the total graduate level credit hours, required in the graduate program, may be counted in meeting both the undergraduate and graduate degree requirements. Of those shared credits, students in an Accelerated Bachelor's/Master's program should begin their graduate program with the standard introductory course(s) for the program whenever possible. So that students may progress through the Accelerated Bachelor's/Master's program in a timely manner, undergraduate programs are encouraged to design their curriculum such that a student can complete some required graduate credit hours while completing the undergraduate degree. For instance, some of the graduate curriculum should also satisfy electives for the undergraduate major.

The program's Graduate Director will designate credit hours to be shared through the advising form and master's degree conferral review process. Shared credit hours will not be marked on the undergraduate record as having a special status in the undergraduate program. They will be included in the student's undergraduate earned hours and GPA. Graduate credit hours taken during the undergraduate program will not be included in the graduate GPA calculation.

¹ If students wish to transfer credits from another university to Loyola University Chicago, the program's Graduate director will review the relevant syllabus(es) to determine whether it meets the criteria for a 400 level course or higher.

² Programs with specialized accreditation requirements that allow programs to offer graduate curriculum to undergraduate students will conform to those specialized accreditation requirements.

³ In rare cases, the Graduate Director may authorize enrollment in a 400-level course for a highly qualified and highly motivated undergraduate, ensuring that the undergraduate's exceptional participation in the graduate class will not diminish in any way the experience of the graduate students regularly enrolled.

⁴ For example, if a particular course is only offered once every 2-3 years, and a student has demonstrated the necessary ability to be successful, the Graduate Director may allow a student to take a graduate level course to be shared prior to the student being formally admitted to the graduate program. See, also, footnote 4.

⁵ Students should not, for example, attempt to negotiate themselves out of a writing intensive requirement on the basis of admission to a graduate program.

Graduation

Degrees are awarded sequentially. All details of undergraduate commencement are handled in the ordinary way as for all students in the School/College/Institute. Once in the graduate program, students abide by the graduation deadlines set forth by the graduate program. Students in these programs must be continuously enrolled from undergraduate to graduate degree program unless given explicit permission by their program for a gap year or approved leave of absence.

LEARNING OUTCOMES

- Examine the sources of environmental degradation and their impacts on health.
- Apply the tools of public health to characterize the impacts on community health using a planetary health perspective.
- Integrate environmental regulatory policies to evaluate the health impacts at local and global scales.
- Incorporate critical public health and environmental health justice perspectives into environmental and human dimensions.
- Gain foundation in public health competencies in the areas of evidence-based approaches, public health and health care systems, planning and management, policy, leadership, communication, inter-professional practice, and systems thinking.

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.