

Degree Requirements and Competencies for the PhD in Environmental Health Sciences
Area of Emphasis: One Health (effective summer 2022)

Required Coursework

	Credits
DEOHS Common Core	
BIOST 511 (<i>Medical Biometry I</i> , Autumn)	4
BIOST 512 (<i>Medical Biometry II</i> , Winter)	4
EPI 511 (<i>Introduction to Epidemiology</i> , Autumn)	4
ENV H 501 (<i>Foundations of Environmental & Occupational Health</i> , Autumn)	4
ENV H 502 (<i>Assessing & Managing Risks from Human Exposure to Environmental Contaminants</i> , Winter)	4
ENV H 503 (<i>Adverse Health Effects of Environmental and Occupational Toxicants</i> , Autumn)	4
ENV H 580 (<i>Environmental and Occupational Health Sciences Seminar</i> , Autumn/Winter/Spring)	6 x 1 = 6 ¹
ENV H 595 (<i>Research Rotation</i> , All Quarters)	2 x 3 = 6 ²
Area of Emphasis: One Health	
ENV H 539 (<i>One Health: Human and Animal Health in a Changing Environment</i> , Spring)	3
ENV H 586 (<i>Current Issues in Occupational Health at the Human and Animal Interface</i> , Autumn)	2
Choose a minimum of 6 credits from the following: ENV H 509 (<i>Microbiome and Environmental Health</i> , Spring, 3 cr.) ENV H 541 (<i>Ecology of Environmentally Transmitted Microbial Hazards</i> , Autumn, 3 cr.) ENV H 542 (<i>Detection and Control of Environmentally Transmitted Microbial Hazards</i> , Winter in odd years, 3 cr.) ENV H 543 (<i>Quantitative Microbial Risk Assessment</i> , Spring, 3 cr.) ENV H 544 (<i>Antibiotic Resistant Bacteria/Genes Impact on the Environment and Public Health</i> , Autumn, 4 cr.) ENV H 547 (<i>Environmental Change and Infectious Disease</i> , Spring, 3 cr.) ENV H 564 (<i>Recognition of Health and Safety Problems in Industry</i> , Autumn, 2 cr.) ENV H 565 (<i>Geographic Information Systems (GIS) in Public Health</i> , Autumn, 3 cr.)	6
Elective Courses ³	≥ 15
Culminating Experience (Thesis)	
ENV H 583 (<i>Thesis Proposal Preparation</i> , Spring)	1
ENV H 800 (<i>Doctoral Dissertation</i> , All Quarters)	27
Total Minimum Credits	90

1. Six quarters of ENV H 580 are required for a total of 6 credits.
2. Students who enter the program with a previous master's degree are required to do two rotations of 3 credits each for a total of 6 credits. Students who enter the program without a master's degree are required to do three rotations of 3 credits each for a total of 9 credits.
3. Student works with their faculty adviser to identify additional courses to reach or exceed the total minimum credit requirement. Elective courses can be ENV H courses or courses from other prefixes (e.g., EPI, BIOST, GH, etc.).

Degree Requirements and Competencies for the PhD in Environmental Health Sciences

Area of Emphasis: One Health (*effective summer 2022*)

Additional Requirements

Students in this degree program are required to:

- Complete a minimum of two research rotations (see footnote #2 above).
- Pass a qualifying exam, typically at the end of their first year of study.
- Pass a general exam.
- Research, prepare, defend, and submit a dissertation.

Degree Competencies

Upon completion of this degree program, you will be able to:

School of Public Health -- All MS Students

- Explain public health history, philosophy and values
- Identify the core functions of public health and the 10 Essential Services
- Explain the role of quantitative and qualitative methods and sciences in describing and assessing a population's health
- List major causes and trends of morbidity and mortality in the US or other community relevant to the school or program
- Discuss the science of primary, secondary and tertiary prevention in population health, including health promotion, screening, etc.
- Explain the critical importance of evidence in advancing public health knowledge
- Explain effects of environmental factors on a population's health
- Explain biological and genetic factors that affect a population's health
- Explain behavioral and psychological factors that affect a population's health
- Explain the social, political and economic determinants of health and how they contribute to population health and health inequities
- Explain how globalization affects global burdens of disease
- Explain an ecological perspective on the connections among human health, animal health, and ecosystem health (e.g., One Health)
- Recognize the means by which social inequities and racism, generated by power and privilege, undermine health

Degree Requirements and Competencies for the PhD in Environmental Health Sciences **Area of Emphasis: One Health (*effective summer 2022*)**

DEOHS -- MS in Environmental Health Sciences

- Apply the major components of the environmental and occupational health framework (problem formulation, hazard identification, dose-response assessment, exposure assessment, risk characterization, risk communication, risk management, evaluation, stakeholder engagement, and research) in order to address environmental public health problems experienced in the community or work environment
- Use epidemiological and statistical techniques to describe and analyze environmental and occupational health data

DEOHS -- PhD in Environmental Health Sciences

- Conceive, develop, conduct, and document original research that advances knowledge in the field of environmental health sciences

DEOHS – Area of Emphasis: One Health

- Demonstrate capacity to function in interdisciplinary teams to investigate health concerns at the human-animal-ecosystem interface
- Analyze complex datasets for health problems at the human animal ecosystem interface using advanced techniques such as genomics or spatial epidemiology
- Use the COHERE guidelines to prepare a One Health scientific manuscript
- Design protocols for human subjects research and animal care and use research for linked human-animal studies
- Define the linkages between an animal sentinel health event and human health