

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

Required Coursework

	Credits
DEOHS Common Core	
BIOST 511 (<i>Medical Biometry I, Autumn</i>)	4
BIOST 512 (<i>Medical Biometry II, Winter</i>)	4
EPI 511 (<i>Introduction to Epidemiology, Autumn</i>)	4
ENV H 501 (<i>Foundations of Environmental & Occupational Health, Autumn</i>)	4
ENV H 502 (<i>Assessing & Managing Risks from Human Exposure to Environmental Contaminants, Winter</i>)	4
ENV H 503 (<i>Adverse Health Effects of Environmental and Occupational Toxicants, Autumn</i>)	4
ENV H 580 (<i>Environmental and Occupational Health Sciences Seminar, Autumn/Winter/Spring</i>)	6 x 1 = 6 ¹
ENV H 595 (<i>Research Rotation, All Quarters</i>)	2 x 3 = 6 ²
Area of Emphasis: Exposure Science	
ENV H 553 (<i>Environmental Exposure Monitoring Methods, Winter</i>)	4
ENV H 555 (<i>Instrumental Methods for Industrial Hygiene Measurement: Laboratory, Spring</i>)	3
ENV H 556 (<i>Quantitative Exposure Assessment, Winter – odd years</i>)	3
ENV H 557 (<i>Exposure Controls, Winter</i>)	3
Elective Courses ³	≥ 13
Culminating Experience (Thesis)	
ENV H 583 (<i>Thesis Proposal Preparation, Spring</i>)	1
ENV H 800 (<i>Doctoral Dissertation, All Quarters</i>)	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.).

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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

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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: Exposure Science

- Recognize and describe adverse effects of environmental exposures on individual and community health and resiliency
- Evaluate human exposure using appropriate strategies and considering multiple sources, media, pathways and life cycles
- Describe the best use, quality assurance strategies and important limitations of accepted sampling, analysis and modeling approaches
- Create study designs that explicitly consider disparities in environmental exposures
- Recommend policies and interventions to prevent and mitigate environmental hazards