

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

**Required Coursework**

	Credits
<b>DEOHS Common Core</b>	
<b>BIOST 511</b> ( <i>Medical Biometry I, Autumn</i> )	4
<b>BIOST 512</b> ( <i>Medical Biometry II, Winter</i> )	4
<b>EPI 511</b> ( <i>Introduction to Epidemiology, Autumn</i> )	4
<b>ENV H 501</b> ( <i>Foundations of Environmental &amp; Occupational Health, Autumn</i> )	4
<b>ENV H 502</b> ( <i>Assessing &amp; Managing Risks from Human Exposure to Environmental Contaminants, Winter</i> )	4
<b>ENV H 503</b> ( <i>Adverse Health Effects of Environmental and Occupational Toxicants, Autumn</i> )	4
<b>ENV H 580</b> ( <i>Environmental and Occupational Health Sciences Seminar, Autumn/Winter/Spring</i> )	6 x 1 = 6 <sup>1</sup>
<b>ENV H 595</b> ( <i>Research Rotation, All Quarters</i> )	2 x 3 = 6 <sup>2</sup>
<b>Area of Emphasis: Exposure Science/Occupational Hygiene</b>	
<b>ENV H 553</b> ( <i>Environmental Exposure Monitoring Methods, Winter</i> )	4
<b>ENV H 555</b> ( <i>Instrumental Methods for Industrial Hygiene Measurement: Laboratory, Spring</i> )	3
<b>ENV H 556</b> ( <i>Quantitative Exposure Assessment, Winter – odd years</i> )	3
<b>ENV H 557</b> ( <i>Exposure Controls, Winter</i> )	3
<b>Elective Courses</b> <sup>3</sup>	≥ 13
<b>Culminating Experience (Thesis)</b>	
<b>ENV H 583</b> ( <i>Thesis Proposal Preparation, Spring</i> )	1
<b>ENV H 800</b> ( <i>Doctoral Dissertation, All Quarters</i> )	27
<b>Total Minimum Credits</b>	<b>90</b>

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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## **Area of Emphasis: Exposure Science/Occupational Hygiene (*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

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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/Occupational Hygiene**

- 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