

## MS-EHS, Area of Emphasis: One Health (Effective Autumn 2022)

### Required Coursework

	Credits
<b>DEOHS Common Core</b>	
<b>BIOST 511</b> ( <i>Medical Biometry I</i> , Autumn)	4
<b>EPI 511</b> ( <i>Introduction to Epidemiology</i> , Autumn)	4
<b>HSERV 579</b> ( <i>Structural Racism and Public Health</i> , Autumn/Winter/Spring)	1
<b>ENV H 501</b> ( <i>Foundations of Environmental &amp; Occupational Health</i> , Autumn)	4
<b>ENV H 502</b> ( <i>Assessing &amp; Managing Risks from Human Exposure to Env. Contaminants</i> , Winter)	4
<b>ENV H 503</b> ( <i>Adverse Health Effects of Environmental and Occupational Toxicants</i> , Autumn)	4
<b>ENV H 580</b> ( <i>Environmental and Occupational Health Sciences Seminar</i> , Autumn/Winter/Spring)	2 x 1 = 2 <sup>1</sup>
<b>Area of Emphasis: One Health</b>	
<b>ENV H 539</b> ( <i>One Health: Human and Animal Health in a Changing Environment</i> , Winter)	3
<b>ENV H 586</b> ( <i>Current Issues in Occupational Health at the Human and Animal Interface</i> , Spring)	2
Choose a minimum of 6 credits from the following: <b>ENV H 509</b> ( <i>Microbiome and Environmental Health</i> , Spring, 3 cr.) <b>ENV H 541</b> ( <i>Ecology of Environmentally Transmitted Microbial Hazards</i> , Autumn, 3 cr.) <b>ENV H 542</b> ( <i>Detection &amp; Control of Env. Transmitted Microbial Hazards</i> , Winter/odd years, 3 cr.) <b>ENV H 543</b> ( <i>Quantitative Microbial Risk Assessment</i> , Spring, 3 cr.) <b>ENV H 544</b> ( <i>Antibiotic Resistant Bacteria/Genes Impact on the Env. and PH</i> , Autumn, 4 cr.) <b>ENV H 547</b> ( <i>Environmental Change and Infectious Disease</i> , Spring, 3 cr.) <b>ENV H 564</b> ( <i>Recognition of Health and Safety Problems in Industry</i> , Autumn, 2 cr.) <b>ENV H 565</b> ( <i>Geographic Information Systems (GIS) in Public Health</i> , Autumn, 3 cr.)	6
<b>Elective Courses</b> <sup>2</sup>	≥ 18
<b>Culminating Experience (Thesis)</b>	
<b>ENV H 583</b> ( <i>Thesis Proposal Preparation</i> , Spring)	1
<b>ENV H 700</b> ( <i>Master's Thesis</i> , All Quarters)	9
<b>Total Minimum Credits</b>	<b>62</b>

- Two quarters of ENV H 580 are required for a total of 2 credits.
- 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.).

### Additional Requirements

- Students in this degree program are required to complete a research thesis.

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### Sample Schedule

The schedule below includes *non-elective courses only*. Students work 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.).

<b>FIRST YEAR</b>		
<b>Autumn Quarter</b>		
<b>BIOST 511</b>	Medical Biometry I	4 cr.
<b>EPI 511</b>	Introduction to Epidemiology	4 cr.
<b>ENV H 501</b>	Foundations of Environmental & Occupational Health	4 cr.
<b>ENV H 503</b>	Adverse Health Effects of Environmental and Occupational Toxicants	4 cr.
<b>Non-Coursework Milestones:</b> Work 1-on-1 with your Initial Faculty Mentor to identify possible thesis projects		
<b>Winter Quarter</b>		
<b>ENV H 502</b>	Assessing & Managing Risks from Human Exposure to Env. Contaminants	4 cr.
<b>ENV H 580</b>	Environmental and Occupational Health Seminar	1 cr.
<b>ENV H 539</b>	One Health: Human and Animal Health in a Changing Environment	3 cr.
	Additional course(s) from list of recommended courses (see table below)	Var.
<b>Non-Coursework Milestones:</b> Continue working with your Faculty Mentor to identify possible thesis projects / Identify a Thesis Adviser by the end of the quarter		
<b>Spring Quarter</b>		
<b>HSERV 579</b>	Structural Racism and Public Health	1 cr.
<b>ENV H 580</b>	Environmental and Occupational Health Seminar	1 cr.
<b>ENV H 583</b>	Thesis Proposal Preparation	1 cr.
<b>ENV H 586</b>	Current Issues in Occupational Health at the Human and Animal Interface	2 cr.
<b>ENV H 700</b>	Master's Thesis	1 cr.
	Additional course(s) from list of recommended courses (see table below)	Var.
<b>Non-Coursework Milestones:</b> Write thesis proposal and form Thesis Committee		
<b>Summer Quarter</b>		
<b>Non-Coursework Milestones:</b> Begin thesis project as outlined in thesis proposal		
<b>SECOND YEAR</b>		
<b>Autumn Quarter</b>		
<b>ENV H 700</b>	Master's Thesis	3 cr.
<b>Non-Coursework Milestones:</b> Continue work on thesis project		
<b>Winter Quarter</b>		
<b>ENV H 700</b>	Master's Thesis	2 cr.
<b>Non-Coursework Milestones:</b> Continue work on thesis project		
<b>Spring Quarter</b>		
<b>ENV H 700</b>	Master's Thesis	3 cr.
<b>Non-Coursework Milestones:</b> Present at Graduate Student Research Day / Defend and submit thesis		

## MS-EHS, Area of Emphasis: One Health (*Effective Autumn 2022*)

### 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

#### 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
- Formulate hypotheses and design experiments to test such hypotheses aimed at advancing knowledge in environment and health sciences

#### DEOHS – Area of Emphasis: One Health

- Describe the benefits and challenges of a multidisciplinary, integrative approach when implementing studies regarding health concerns at the human-animal-ecosystem interface
- Assess zoonotic diseases and other exposures (including toxic and infectious) using a comparative, species spanning approach including animal sentinel and natural animal model concepts
- Describe an integrated approach to prevention that incorporates human, animal, and environmental perspectives in a systems framework
- Explain the ECOHAB set of connections between human, animal, and environmental health
- Apply the COHERE guidelines to critically appraise One Health Studies