MS-EHS, Area of Emphasis: Environmental Toxicology (*Effective Autumn 2022*)

Required Coursework

	Credits
DEOHS Common Core	
BIOST 511 (*Medical Biometry I*, Autumn)	4
EPI 511 (*Introduction to Epidemiology*, Autumn)	4
HSERV 579 (*Structural Racism and Public Health*, Autumn/Winter/Spring)	1
ENV H 501 (*Foundations of Environmental & Occupational Health*, Autumn)	4
ENV H 502 (*Assessing & Managing Risks from Human Exposure to Env. Contaminants*, Winter)	4
ENV H 503 (*Adverse Health Effects of Environmental and Occupational Toxicants*, Autumn)	4
ENV H 580 (*Environmental and Occupational Health Sciences Seminar,* Autumn/Winter/Spring)	2 x 1 = 2[1]
Area of Emphasis: Environmental Toxicology	
ENV H 515 (*Organ System Toxicology*, Winter)	3
ENV H 516 (*Toxic Agents: Effects and Mechanisms*, Spring)	3
ENV H 577 (*Risk Assessment for Environmental Health*, Autumn)	4
4 credits from any combination of: **ENV H 591** (*Current Topics in Toxicology*, Winter, 2 cr.) **ENV H 593** (*Current Topics in Risk Assessment*, Autumn/Spring, 2 cr.)	4
Choose one from the following: **ENV H 531** (*Neurotoxicology*, Winter - even years, 3 cr.) **ENV H 532** (*Reproductive and Developmental Toxicology,* Winter - odd years, 3 cr.) **ENV H 533** (*Molecular Toxicology*, Quarter TBD, 3 cr.) **ENV H 567** (*Mechanisms of Carcinogenesis,* Quarter TBD, 2 cr.)	2 (min.)
Elective Courses[2]	Varies
Culminating Experience (Thesis)	
ENV H 583 (*Thesis Proposal Preparation*, Spring)	1
ENV H 700 (*Master's Thesis*, All Quarters)	9
Total Minimum Credits	**62**

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

FIRST YEAR		
Autumn Quarter		
BIOST 511	Medical Biometry I	4 cr.
EPI 511	Introduction to Epidemiology	4 cr.
ENV H 501	Foundations of Environmental & Occupational Health	4 cr.
ENV H 503	Adverse Health Effects of Environmental and Occupational Toxicants	4 cr.
Non-Coursework Milestones: Work 1-on-1 with your Initial Faculty Mentor to identify possible thesis projects		
Winter Quarter		
ENV H 502	Assessing & Managing Risks from Human Exposure to Env. Contaminants	4 cr.
ENV H 515	Organ System Toxicology	3 cr.
ENV H 580	Environmental and Occupational Health Seminar	1 cr.
ENV H 591	Current Topics in Toxicology	2 cr.
	Additional course from pick list (see table below)	Var.
Non-Coursework Milestones: Continue working with your Faculty Mentor to identify possible thesis projects / Identify a Thesis Adviser by the end of the quarter		
Spring Quarter		
HSERV 579	Structural Racism and Public Health	1 cr.
ENV H 516	Toxic Agents: Effects and Mechanisms	3 cr.
ENV H 580	Environmental and Occupational Health Seminar	1 cr.
ENV H 583	Thesis Proposal Preparation	1 cr.
ENV H 593	Current Topics in Risk Assessment	2 cr.
ENV H 700	Master's Thesis	1 cr.
Non-Coursework Milestones: Write thesis proposal and form Thesis Committee		
Summer Quarter		
Non-Coursework Milestones: Begin thesis project as outlined in thesis proposal		
SECOND YEAR		
Autumn Quarter		
ENV H 577	Risk Assessment for Environmental Health	4 cr.
ENV H 700	Master's Thesis	3 cr.
Non-Coursework Milestones: Continue work on thesis project		
Winter Quarter		
ENV H 700	Master's Thesis	2 cr.
Non-Coursework Milestones: Continue work on thesis project		
Spring Quarter		
ENV H 700	Master's Thesis	3 cr.
Non-Coursework Milestones: Present at Graduate Student Research Day / Defend and submit thesis		

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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: Environmental Toxicology

- Define the major classes of toxicants present in the environment and the workplace and describe their sources, pathways, and routes of exposure
- Describe and analyze how toxicants interact with biological systems and the mechanisms by which they elicit adverse effects in humans and other organisms
- Explain the core principles of research ethics and apply these principles to specific research projects
- Discuss regulatory authorities responsible for assessing toxic hazards
- Describe relevant toxicology-related health and safety regulations