Degree Requirements and Competencies for the MS in Environmental Health Sciences: Applied Area of Emphasis: Environmental Toxicology (effective summer 2022)

Required Coursework

<table>
<thead>
<tr>
<th>DEOHS Common Core</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOST 511 <em>(Medical Biometry I, Autumn)</em></td>
<td>4</td>
</tr>
<tr>
<td>EPI 511 <em>(Introduction to Epidemiology, Autumn)</em></td>
<td>4</td>
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<tr>
<td>ENV H 501 <em>(Foundations of Environmental &amp; Occupational Health, Autumn)</em></td>
<td>4</td>
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<tr>
<td>ENV H 502 <em>(Assessing &amp; Managing Risks from Human Exposure to Environmental Contaminants, Winter)</em></td>
<td>4</td>
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<tr>
<td>ENV H 503 <em>(Adverse Health Effects of Environmental and Occupational Toxicants, Autumn)</em></td>
<td>4</td>
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</tbody>
</table>
| ENV H 580 *(Environmental and Occupational Health Sciences Seminar, Autumn/Winter/Spring)* | 3 x 1 = 3 | 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)*                  | 3       |
| ENV H 591 *(Current Topics in Toxicology, Winter)*                              | 2       |
| ENV H 593 *(Current Topics in Risk Assessment, Autumn/Spring)*                  | 2       |
| Elective Courses²                                                               | ≥10     |

Culminating Experience (Thesis)

| ENV H 598 *(Degree Program Project/Portfolio, All Quarters)*                    | 3       |
| ENV H 599 *(Field Studies, All Quarters)*                                      | 3       |

Total Minimum Credits 52

1. Three quarters of ENV H 580 are required for a total of 3 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 culminating project.

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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: Applied

- 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
- Identify a current, practical problem in environmental health sciences and collect, integrate and analyze relevant information to produce practical solutions.

DEOHS – Area of Emphasis: Environmental Toxicology

- Identify representative chemical, physical, and biological risk factors and their effects on health and safety
- Discuss the basic approaches to toxicity testing
- Discuss regulatory authorities responsible for assessing toxic hazards.

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- Describe relevant toxicology-related health and safety regulations
- Compare-Contrast relevant regulatory compliance strategies
- Discuss how science, values, technology, and economic systems interact in health and safety policy
- Apply effective strategies to communicate environmental, biomedical or occupational health risks and intervention strategies to regulators, business, labor, or professional groups.