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

**Required Coursework**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOST 511</td>
<td>Medical Biometry I, Autumn</td>
<td>4</td>
</tr>
<tr>
<td>EPI 511</td>
<td>Introduction to Epidemiology, Autumn</td>
<td>4</td>
</tr>
<tr>
<td>ENV H 501</td>
<td>Foundations of Environmental &amp; Occupational Health, Autumn</td>
<td>4</td>
</tr>
<tr>
<td>ENV H 502</td>
<td>Assessing &amp; Managing Risks from Human Exposure to Environmental Contaminants, Winter</td>
<td>4</td>
</tr>
<tr>
<td>ENV H 503</td>
<td>Adverse Health Effects of Environmental and Occupational Toxicants, Autumn</td>
<td>4</td>
</tr>
<tr>
<td>ENV H 580</td>
<td>Environmental and Occupational Health Sciences Seminar, Autumn/Winter/Spring</td>
<td>3 x 1 = 3</td>
</tr>
</tbody>
</table>

**Area of Emphasis: Environmental Toxicology**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ENV H 515</td>
<td>Organ System Toxicology, Winter</td>
<td>3</td>
</tr>
<tr>
<td>ENV H 516</td>
<td>Toxic Agents: Effects and Mechanisms, Spring</td>
<td>3</td>
</tr>
<tr>
<td>ENV H 577</td>
<td>Risk Assessment for Environmental Health, Autumn</td>
<td>3</td>
</tr>
<tr>
<td>ENV H 591</td>
<td>Current Topics in Toxicology, Winter</td>
<td>2</td>
</tr>
<tr>
<td>ENV H 593</td>
<td>Current Topics in Risk Assessment, Autumn/Spring</td>
<td>2</td>
</tr>
</tbody>
</table>

Choose one from the following:

- ENV H 531 (Neurotoxicology, Winter in even years, 3 cr.)
- ENV H 532 (Reproductive and Developmental Toxicology, Winter in even years, 3 cr.)
- ENV H 533 (Molecular Toxicology, Quarter TBD, 3 cr.)
- ENV H 567 (Mechanisms of Carcinogenesis, Quarter TBD, 2 cr.)

**Elective Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENV H 583</td>
<td>Thesis Proposal Preparation, Spring</td>
<td>1</td>
</tr>
<tr>
<td>ENV H 700</td>
<td>Master’s Thesis, All Quarters</td>
<td>9</td>
</tr>
</tbody>
</table>

**Total Minimum Credits** 62

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 research 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

Department of Environmental & Occupational Health Sciences, School of Public Health, University of Washington • Rev. 3/22/21
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- Discuss regulatory authorities responsible for assessing toxic hazards
- Describe relevant toxicology-related health and safety regulations