# Required Coursework

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DEOHS Common Core</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIOST 511</td>
<td><em>(Medical Biometry I, Autumn)</em></td>
<td>4</td>
</tr>
<tr>
<td>BIOST 512</td>
<td><em>(Medical Biometry II, Winter)</em></td>
<td>4</td>
</tr>
<tr>
<td>EPI 511</td>
<td><em>(Introduction to Epidemiology, Autumn)</em></td>
<td>4</td>
</tr>
<tr>
<td>HSERV 579</td>
<td><em>(Structural Racism and Public Health, Autumn/Winter/Spring)</em></td>
<td>1</td>
</tr>
<tr>
<td>ENV H 501</td>
<td><em>(Foundations of Environmental &amp; Occupational Health, Autumn)</em></td>
<td>4</td>
</tr>
<tr>
<td>ENV H 502</td>
<td><em>(Assessing &amp; Managing Risks from Human Exposure to Env. Contaminants, Winter)</em></td>
<td>4</td>
</tr>
<tr>
<td>ENV H 503</td>
<td><em>(Adverse Health Effects of Environmental and Occupational Toxicants, Autumn)</em></td>
<td>4</td>
</tr>
<tr>
<td>ENV H 504</td>
<td><em>(Advanced Environmental Health Sciences Research Methods, Spring)</em></td>
<td>4</td>
</tr>
<tr>
<td>ENV H 580</td>
<td><em>(Environmental and Occupational Health Sciences Seminar, Autumn/Winter/Spring)</em></td>
<td>5 x 1 = 5¹</td>
</tr>
<tr>
<td>ENV H 595</td>
<td><em>(Research Rotation, All Quarters)</em></td>
<td>2 x 3 = 6²</td>
</tr>
<tr>
<td><strong>Area of Emphasis: Environmental Toxicology</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENV H 515</td>
<td><em>(Organ System Toxicology, Winter)</em></td>
<td>3</td>
</tr>
<tr>
<td>ENV H 516</td>
<td><em>(Toxic Agents: Effects and Mechanisms, Spring)</em></td>
<td>3</td>
</tr>
<tr>
<td>ENV H 577</td>
<td><em>(Risk Assessment for Environmental Health, Autumn)</em></td>
<td>4</td>
</tr>
<tr>
<td>ENV H 591</td>
<td><em>(Current Topics in Toxicology, Winter)</em></td>
<td>2</td>
</tr>
<tr>
<td>ENV H 593</td>
<td><em>(Current Topics in Risk Assessment, Autumn/Spring)</em></td>
<td>2</td>
</tr>
<tr>
<td>Choose two from the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENV H 531</td>
<td><em>(Neurotoxicology, Winter in even years, 3 cr.)</em></td>
<td>3</td>
</tr>
<tr>
<td>ENV H 532</td>
<td><em>(Reproductive and Developmental Toxicology, Winter in odd years, 3 cr.)</em></td>
<td>3</td>
</tr>
<tr>
<td>ENV H 533</td>
<td><em>(Molecular Toxicology, Quarter TBD, 3 cr.)</em></td>
<td>3</td>
</tr>
<tr>
<td>ENV H 567</td>
<td><em>(Mechanisms of Carcinogenesis, Quarter TBD, 2 cr.)</em></td>
<td>2</td>
</tr>
<tr>
<td><strong>Elective Courses²</strong></td>
<td>≥ 3</td>
<td></td>
</tr>
<tr>
<td><strong>Culminating Experience (Thesis)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENV H 583</td>
<td><em>(Thesis Proposal Preparation, Spring)</em></td>
<td>1</td>
</tr>
<tr>
<td>ENV H 800</td>
<td><em>(Doctoral Dissertation, All Quarters)</em></td>
<td>27</td>
</tr>
<tr>
<td><strong>Total Minimum Credits</strong></td>
<td>90</td>
<td></td>
</tr>
</tbody>
</table>

1. Five quarters of ENV H 580 are required for a total of 5 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.).

## Additional Requirements

- Students in this degree program are required to complete a dissertation.
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.).

<table>
<thead>
<tr>
<th>FIRST YEAR</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Autumn Quarter</td>
<td></td>
</tr>
<tr>
<td>BIOST 511</td>
<td>Medical Biometry I</td>
<td>4 cr.</td>
</tr>
<tr>
<td>EPI 511</td>
<td>Introduction to Epidemiology</td>
<td>4 cr.</td>
</tr>
<tr>
<td>ENV H 501</td>
<td>Foundations of Environmental &amp; Occupational Health</td>
<td>4 cr.</td>
</tr>
<tr>
<td>ENV H 503</td>
<td>Adverse Health Effects of Environmental and Occupational Toxicants</td>
<td>4 cr.</td>
</tr>
<tr>
<td>ENV H 595</td>
<td>Research Rotation (see footnote #2 under “Required Coursework” below)</td>
<td>2 cr.</td>
</tr>
</tbody>
</table>

*Non-Coursework Milestones:* Work with Dissertation Adviser to identify research rotations, plan dissertation project, and prepare for the Qualifying Exam

<table>
<thead>
<tr>
<th>Winter Quarter</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOST 512</td>
<td>Medical Biometry II</td>
<td>4 cr.</td>
</tr>
<tr>
<td>ENV H 502</td>
<td>Assessing &amp; Managing Risks from Human Exposure to Env. Contaminants</td>
<td>4 cr.</td>
</tr>
<tr>
<td>ENV H 515</td>
<td>Organ System Toxicology</td>
<td>3 cr.</td>
</tr>
<tr>
<td>ENV H 580</td>
<td>Environmental and Occupational Health Seminar</td>
<td>1 cr.</td>
</tr>
<tr>
<td>ENV H 595</td>
<td>Research Rotation (see footnote #2 under “Required Coursework” below)</td>
<td>2 cr.</td>
</tr>
<tr>
<td>ENV H 591</td>
<td>Current Topics in Toxicology</td>
<td>2 cr.</td>
</tr>
</tbody>
</table>

*Non-Coursework Milestones:* Work with Dissertation Adviser to identify research rotations, plan dissertation project, and prepare for the Qualifying Exam

<table>
<thead>
<tr>
<th>Spring Quarter</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>HSERV 579</td>
<td>Structural Racism and Public Health</td>
<td>1 cr.</td>
</tr>
<tr>
<td>ENV H 504</td>
<td>Advanced Environmental Health Sciences Research Methods</td>
<td>4 cr.</td>
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<td>ENV H 516</td>
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<td>Environmental and Occupational Health Seminar</td>
<td>1 cr.</td>
</tr>
<tr>
<td>ENV H 583</td>
<td>Thesis Proposal Preparation</td>
<td>1 cr.</td>
</tr>
<tr>
<td>ENV H 593</td>
<td>Current Topics in Risk Assessment</td>
<td>2 cr.</td>
</tr>
<tr>
<td>ENV H 595</td>
<td>Research Rotation (see footnote #2 under “Required Coursework” below)</td>
<td>2 cr.</td>
</tr>
<tr>
<td>ENV H 800</td>
<td>Doctoral Dissertation</td>
<td>Var.</td>
</tr>
</tbody>
</table>

*Non-Coursework Milestones:* Work with Dissertation Adviser to plan dissertation project, and prepare for the PhD Qualifying Exam

<table>
<thead>
<tr>
<th>Summer Quarter</th>
<th></th>
<th></th>
</tr>
</thead>
</table>

*Non-Coursework Milestones:* Complete the PhD Qualifying Exam

<table>
<thead>
<tr>
<th>SECOND YEAR</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Autumn Quarter</td>
<td></td>
</tr>
<tr>
<td>ENV H 577</td>
<td>Risk Assessment for Environmental Health</td>
<td>4 cr.</td>
</tr>
<tr>
<td>ENV H 580</td>
<td>Environmental and Occupational Health Seminar</td>
<td>1 cr.</td>
</tr>
<tr>
<td></td>
<td>Additional course from pick list (see table below)</td>
<td>Var.</td>
</tr>
<tr>
<td>ENV H 800</td>
<td>Doctoral Dissertation</td>
<td>Var.</td>
</tr>
</tbody>
</table>

*Non-Coursework Milestones:* Continue work on dissertation research project / form Doctoral Supervisory Committee by the end of spring quarter of year two

(Continued next page)
PhD-EHS, Area of Emphasis: Environmental Toxicology *(Effective Autumn 2022)*

<table>
<thead>
<tr>
<th>Winter Quarter</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ENV H 580</strong></td>
<td>Environmental and Occupational Health Seminar</td>
</tr>
<tr>
<td></td>
<td>Additional course from pick list (see table below)</td>
</tr>
<tr>
<td><strong>ENV H 800</strong></td>
<td>Doctoral Dissertation</td>
</tr>
</tbody>
</table>

**Non-Coursework Milestones:** Continue work on dissertation research project / form Doctoral Supervisory Committee by the end of spring quarter of year two

<table>
<thead>
<tr>
<th>Spring Quarter</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ENV H 580</strong></td>
<td>Environmental and Occupational Health Seminar</td>
</tr>
<tr>
<td><strong>ENV H 800</strong></td>
<td>Doctoral Dissertation</td>
</tr>
</tbody>
</table>

**Non-Coursework Milestones:** Continue work on dissertation research project / form Doctoral Supervisory Committee by the end of spring quarter of year two

THIRD YEAR

**Non-Coursework Milestones:** Continue work on dissertation research project / Take General Exam

FOURTH YEAR

**Non-Coursework Milestones:** Continue work on dissertation research project

FIFTH YEAR *

**Non-Coursework Milestones:** Continue work on dissertation research project / Complete and defend dissertation in the Final Exam

* Five years is the average time to degree, but the university allows up to ten years to complete a PhD.*

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* ENVIRONMENTAL & OCCUPATIONAL HEALTH SCIENCES
  UNIVERSITY of WASHINGTON | SCHOOL OF PUBLIC HEALTH

Rev. 09/12/22
PhD-EHS, Area of Emphasis: Environmental Toxicology (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 -- PhD in Environmental Health Sciences

- Conceive, develop, conduct, and document original research that advances knowledge in the field of environmental health sciences
- Design experiments utilizing the principles and practical aspects of good experimental design to ensure rigor, statistical power, robustness, and reproducibility, and control for bias
- Conduct human and animal research and communicate the results of that research according to the most current ethical and regulatory guidelines
- Manage, analyze, visualize, and share environmental and occupational health data utilizing best practices and appropriate tools
- Collect, analyze, and validate different types of data (survey, direct exposure, biomarker, surveillance, etc.) from environmental health studies using appropriate practices and methodologies
- Translate environmental health research into practice and implement evidence-based interventions

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
- Conceive, develop and conduct original research that advances knowledge in the field of environmental toxicology

ENVIRONMENTAL & OCCUPATIONAL HEALTH SCIENCES
UNIVERSITY OF WASHINGTON | SCHOOL OF PUBLIC HEALTH

Rev. 09/12/22
• Apply advanced knowledge and methodologies from supporting disciplines (e.g., molecular biology, biochemistry, physiology, pathology) to original research in environmental toxicology
• Demonstrate the ability to effectively communicate original research findings both orally (e.g., at a scientific conference) and through preparation of an original manuscript suitable for publication in a peer reviewed journal in the field of environmental toxicology