ENVIRONMENTAL HEALTH, MHS

MHS in Environmental Health
The Master of Health Science provides a firm academic foundation in the field of environmental health.

The program primarily targets individuals holding a bachelor's degree who see a place for environmental health in their future academic or career goals. In addition to coursework, MHS students prepare an essay addressing an environmental health problem and make a formal presentation on the topic to an audience of faculty and students.

Some graduates pursue doctoral degrees in public health, medicine, and law, while others head to governmental agencies, NGOs, and the private sector. The program may also accommodate the educational needs of those already working in these sectors, who want to develop a stronger knowledge base in environmental health.

If desired, the MHS further offers specialization in the following areas (https://ehe.jhu.edu/graduate/masters-programs/master-of-health-science-in-environmental-health/):

- Food Systems, Water, and Environmental Sustainability
- Health Security
- Pre-medicine
- Population Environmental Health
- Toxicology for Human Risk Assessment

Program Director:
Megan Latshaw, PhD, MHS

Program Requirements
MHS students formally meet as a group four times during the academic year. These meetings aim to build community, provide professional development, and share information about administrative, course, or other programmatic issues. Attendance is mandatory for MHS students, as is attendance at the EHE Grand Rounds seminars scheduled on the second Friday of each month, and at the master’s presentations in May. This attendance, along with monthly check-ins with advisers, and meeting deadlines for the essay, forms the basis of the grade for special studies courses PH.181.845 MHS Special Studies & Research and PH.181.850 MHS Essay. Students who do not successfully complete the requirements for the special studies courses face dismissal from the program.

Coursework
Students consult the course list and obtain formal approval from their faculty advisor prior to registration. Required core courses include environmental health, toxicology, epidemiology, risk sciences, and statistics. Electives allow students to select courses according to their interests and career goals.

Generally, full-time students register for at least 16 credits per term in order to reach the 64-credit requirement for the degree. Students should discuss with their advisor the options which meet the biostatistics and epidemiology course requirements. In order to substitute a recommended course with something not listed, approval must be granted by the program director. Students may also consider earning certificates (http://www.jhsph.edu/academics/certificate-programs/) in addition to the MHS.

Course location and modality is found on the BSPH website (https://publichealth.jhu.edu/academics/course-directory/coursesection-numbers-explained/).

Required Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>PH.550.860</td>
<td>Academic &amp; Research Ethics at BSPH</td>
<td>0</td>
</tr>
<tr>
<td>PH.180.609</td>
<td>Principles of Environmental Health</td>
<td>4</td>
</tr>
<tr>
<td>PH.180.610</td>
<td>Applied Environmental Health Practice</td>
<td>4</td>
</tr>
<tr>
<td>PH.187.610</td>
<td>Public Health Toxicology</td>
<td>4</td>
</tr>
<tr>
<td>PH.317.600</td>
<td>Introduction to the Risk Sciences and Public Policy</td>
<td>4</td>
</tr>
<tr>
<td>PH.552.601</td>
<td>Foundational Principles of Public Health</td>
<td>0.5</td>
</tr>
<tr>
<td>PH.552.603</td>
<td>The Role of Qualitative Methods and Science in Describing</td>
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<tr>
<td></td>
<td>and Assessing a Population's Health</td>
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<tr>
<td>PH.181.845</td>
<td>MHS Special Studies &amp; Research</td>
<td>varies</td>
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<tr>
<td>PH.181.850</td>
<td>MHS Essay</td>
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Electives

<table>
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<tr>
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<tr>
<td>PH.180.611</td>
<td>The Global Environment, Climate Change, and Public Health</td>
<td>4</td>
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<tr>
<td>PH.180.634</td>
<td>Public Health Emergencies: Risk Communication and Decision Science</td>
<td>3</td>
</tr>
<tr>
<td>PH.188.680</td>
<td>Fundamentals of Occupational Health</td>
<td>3</td>
</tr>
<tr>
<td>PH.188.694</td>
<td>Health of Vulnerable Worker Populations</td>
<td>3</td>
</tr>
<tr>
<td>PH.317.601</td>
<td>Risk Policy, Management and Communication</td>
<td>3</td>
</tr>
<tr>
<td>PH.180.620</td>
<td>Introduction to Food Systems and Public Health</td>
<td>4</td>
</tr>
<tr>
<td>PH.180.621</td>
<td>Protecting the Environment and Safeguarding Worker Health: A Problem-Based Approach</td>
<td>3</td>
</tr>
<tr>
<td>PH.120.601</td>
<td>Biochemistry II: Major Metabolic Pathways</td>
<td>5</td>
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<td>PH.180.647</td>
<td>The Health Effects of Indoor and Outdoor Air Pollution</td>
<td>3</td>
</tr>
<tr>
<td>PH.180.644</td>
<td>Food System Resilience to Disasters: COVID-19, Climate Change, and Beyond</td>
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<td>PH.187.632</td>
<td>Molecular Toxicology</td>
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<td>PH.188.688</td>
<td>Global Sustainability &amp; Health Seminar</td>
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<td>PH.183.631</td>
<td>Fundamentals of Human Physiology</td>
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<td>PH.187.640</td>
<td>Toxicology 21: Scientific Foundations</td>
<td>3</td>
</tr>
<tr>
<td>PH.180.650</td>
<td>Fundamentals of Clinical Oncology for Public Health Practitioners</td>
<td>3</td>
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<td>PH.180.602</td>
<td>Environment and Health in Low and Middle income Countries</td>
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<tr>
<td>PH.180.623</td>
<td>Infectious Disease Threats to Global Health Security</td>
<td>3</td>
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<tr>
<td>PH.180.624</td>
<td>Biotechnology and Health Security</td>
<td>3</td>
</tr>
<tr>
<td>PH.182.640</td>
<td>Food- and Water- Borne Diseases</td>
<td>3</td>
</tr>
<tr>
<td>PH.180.655</td>
<td>Baltimore Food Systems: A Case Study of Urban Food Environments</td>
<td>4</td>
</tr>
<tr>
<td>PH.180.625</td>
<td>Community-Driven Epidemiology and Environmental Justice</td>
<td>3</td>
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students, representing a substantive application of analytic and technical
skills learned during the degree program. The content addresses a
current environmental health problem pertinent to the educational goals
of the student and approved by the adviser. The essay is not a research
paper or thesis, but rather an informative and in-depth literature review
that includes potential solutions to the problem. Ideally students will
work with community-based organizations, governmental agencies, or
researchers on a real-world issue. A more detailed guidance document
for the essay will be shared with students during their second term and they
can find the most recent essay guidance and policy in the handbook.

The student will meet with the adviser throughout the essay-writing
process in order to ensure fulfillment of essay requirements, as well as
assure that the essay is properly prepared for presentation and final
approval. The essay must be reviewed and approved by the adviser and
one other faculty member or expert chosen by the student and approved
by the adviser.

All students completing the MHS are required to make at least one
presentation of their essay to an audience of faculty and students of the
Department.

MHS Policies

Advisers

All master’s students will be assigned an adviser who serves as the
primary contact for the Department, assists the student with course
selection each term, approves their essay or thesis, and helps interpret
Departmental and School policies. The student is free to change advisers,
but this change must be approved by the program director and sent to the
academic coordinator via email.

Assessment of Progress

Students must meet minimum academic standards to remain in the
master’s program. Each term the student should review grades from
the previous term with their adviser. Specific goals will be determined
following this review. A student who is experiencing academic difficulty
will be notified in writing if they are expected to achieve a specific GPA
during the upcoming term. Failure to meet any of the following criteria is
grounds for dismissal from the program.

Cumulative GPA

The School requires master’s students to maintain a minimum 2.75
cumulative grade point average. Students with a GPA falling below 2.75
will be placed on academic warning and will have one term of registration
in which to raise their GPA above the threshold for their degree. The academic
coordinator will notify students placed on academic warning
and their performance will be reviewed by the Educational Programs
Committee (EPC).

All recommendations about academic standing will be then presented
to the Department’s Executive Committee for final disposition. Students not meeting the minimum GPA after one term may be granted additional
term(s) on academic warning if academic progress has been shown in
the cumulative GPA; that approval beyond one term must be reported to
the School’s Committee on Academic Standards. Students on academic
warning must meet with their academic adviser and program director
(or academic coordinator) each term to review their academic plan and
receive approval for their course schedule prior to registering for courses.
Students with a cumulative GPA below the minimum may not register for
more than 18 credits per term. Any repeated courses count towards this
18-credit limit.

Essay and Presentation

MHS students must write an essay and present a summary of it during
a formal symposium. The essay serves as an integrating experience for
students, representing a substantive application of analytic and technical
skills learned during the degree program. The content addresses a
current environmental health problem pertinent to the educational goals
of the student and approved by the adviser. The essay is not a research
paper or thesis, but rather an informative and in-depth literature review
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Grades in Core Courses
Students must earn a minimum grade on a set of required program-specific core courses: “Pass” for courses offered only on a pass/fail basis; “C” or higher for master’s students for courses offered for letter grading. A student who earns a grade below that threshold in a course that meets a core requirement must, at the next opportunity, make a second attempt to complete the core course by repeating the same course or by completing another course that has been approved by the program director. A grade below the threshold on the second attempt may be grounds for dismissal and must be reported to the School’s Committee on Academic Standards.

Department Retreat
Each January, the EHE faculty and students attend a retreat on research currently being conducted in the department. The retreat ends with a keynote talk from an investigator outside of EHE. The retreat provides master’s students the chance to learn more about research being conducted in the department. Attending the retreat, including talks and poster sessions, is expected for ScM students and optional for MHS students.

Bachelor's/MHS Credit Transfer
Bachelor’s/MHS students who take JHSPH courses as an undergraduate may transfer up to one-half, but no more than 16 JHSPH credits to the MHS program. Online courses do not count towards this requirement. Students must earn a grade of B or higher in courses transferred to fulfill a program requirement; grades of C may only be transferred towards elective credits.

MHS to ScM Transfer Process
Students who are interested in transferring to the ScM program may begin the process to do so at the start of term 2. Identification of an appropriate and willing faculty research mentor (https://ehe.jhu.edu/graduate/masters-programs/master-of-science-in-environmental-health/program-faculty-research-advisers.html) serves as an essential step in the process, which should be initiated as early as possible, preferably while an applicant to the MHS program.

By the middle of term 2, MHS students submit a ScM transfer request form. The form includes a brief explanation of how the ScM research opportunity fits with the student’s educational and research goals. The proposed research faculty needs to provide a letter of willingness to assume the role and responsibilities of ScM thesis adviser (this person may or may not be the current MHS adviser). Students must demonstrate excellent academic success at the graduate level in the first two terms of the year (minimum GPA of 3.0).

A sub-group of the ScM research faculty (program director and 2-3 others) will review the request to confirm that the requirements have been met and, based on that input, the program director will approve or disapprove of the request for degree transfer. The Office of Records and Registration will be notified of the degree transfer, effective term 3.

Graduates have competence in the following:
1. toxicology
2. statistical evaluation of data
3. epidemiological studies in environmental health
4. risk sciences and public policy
5. research ethics
6. public health perspectives in research