

OCCUPATIONAL AND ENVIRONMENTAL HYGIENE, MASTER OF SCIENCE

The Occupational and Environmental Hygiene, Master of Science program is accredited by the Accreditation Board for Engineering and Technology (ABET) Applied and Natural Science Accreditation Commission (ANSAC) and is designed to prepare students to pass the Certified Industrial Hygienist (CIH) examination administered by the American Board of Industrial Hygiene (ABIH).

All Occupational and Environmental Hygiene, Master of Science core curriculum courses are offered through the Bloomberg School of Public Health, so students will need to follow this academic calendar (<https://www.jhsph.edu/academics/calendar/2020-2021.html>).

The Bloomberg School of Public Health operates on a term system rather than a semester system. There are 4 numbered terms in the regular academic year as well as a summer institute and a winter intersession. The academic terms are 8 weeks in length and the institutes/intersessions are 2 weeks each. Part-time/Online Occupational and Environmental Hygiene, Master of Science students are required to come to campus for courses that do not translate to an online format (laboratory and field trip-based courses). These courses are held during the summer institute and winter intersession. Students will attend 2 summer institutes and one winter intersession over the course of their degree program.

Students must be employed in the industrial hygiene or safety fields since all students are required to complete an independent professional project as part of their degree and in most instances, this is completed at the student's place of employment.

Prior education must include (1) an undergraduate degree from a regionally accredited four-year college or university, (2) successful completion of college-level courses in biology, chemistry, calculus and physics.

Applicants whose prior education does not include the prerequisites listed above may still enroll under provisional status, followed by full admission status once they have completed the missing prerequisites. Courses completed at a local community college are acceptable.

1. Prior education must include:
 - An undergraduate degree from a regionally accredited four-year college or university.
 - Successful completion of college-level courses in biology, chemistry, calculus, and physics. Admitted students typically have earned a minimum grade point average of 3.0 on a 4.0 scale (B or above).
 - If prior education does not include the prerequisites above, the student must complete them before they can be admitted to the program. Courses completed at a local community college are acceptable.
2. The GRE is required for this program; it is one of the ABET-mandated minimum requirements for admitted students. The MCAT is acceptable but not preferred. A waiver may be requested if the applicant has:

- A graduate degree (master's or doctoral degree), OR
 - Successfully completed the Environmental and Occupational Health, Graduate Certificate (<https://publichealth.jhu.edu/academics/environmental-and-occupational-health-certificate-program/>) and earned at least a 'B' in all courses taken for the Certificate.
3. Students must be employed in the industrial hygiene or safety fields since all students are required to complete an independent professional project as part of their degree and in most instances, this is completed at the student's place of employment.

Program Requirements

All courses listed below are required for degree completion. Students have up to 5 years to complete the degree requirements. We recommend that students working full time limit their course registration to 1 or 2 courses per term.

The majority of the degree can be completed online, but students are required to come to campus for courses that do not translate to an online format. These courses include a hands-on laboratory course (students learn how to do gas, vapor and particulate sampling, use direct reading instruments, etc.) and a field trip course where students visit industries in the greater Baltimore area (examples are: Domino Sugar, Harley Davidson, Nestles Ice Cream, Vulcan Mine, Ellicott Dredges).

Students who complete the Environmental and Occupational Health, Graduate Certificate (<https://ehe.jhu.edu/graduate/masters-programs/master-of-science-in-occupational-and-environmental-hygiene/stepping-stone-to-ms-oe.html>), prior to being admitted to the Occupational and Environmental Hygiene, Master of Science degree may apply all core curriculum courses towards the degree if they received a 'B' or better in all courses.

Students must maintain minimum academic standards (see below). They are also responsible for the following:

- Academic Ethics Course
- Occupational and Environmental Hygiene, Master of Science Part-time/Online Curriculum (all courses are required)
- Independent Professional Project
- Master's essay and presentation

Academic Standards

Students must meet minimum academic standards to remain in the MS OEH Program. Failure to meet any of the criteria below is grounds for dismissal from the program.

For satisfactory academic progress, students must:

1. Maintain a minimum of 2.75 cumulative grade point average.
2. Retake a required course in which they receive a grade of 'D' or 'F'.

If a student receives a grade of 'D' or 'F' twice in the same required course, they may not take the course a third time. If the course is a required course with no other options, the student will be dismissed from the program.

Internship, Culminating Project, Master's Essay and Presentation

The student is expected to assume independent responsibility for a project, the content of which should be based on an occupational or

environmental health problem that is pertinent to the educational goals of the student and approved by the advisor (Examples (<https://ehe.jhu.edu/graduate/masters-programs/master-of-science-in-occupational-and-environmental-hygiene/degree-requirements.html>)).

Part-time/Online students will perform an Independent Professional Project (IPP) at their place of employment in most instances.

To Register for Classes

Please refer to the course schedule using the SIS Class Search (<https://sis.jhu.edu/classes/>) published each term for exact dates, times, locations, fees, and instructors. Courses can also be found by visiting the Bloomberg School of Public Health Course Directory (<https://www.jhsph.edu/courses/>).

Email ep-registration@jhu.edu to register for classes each term. Include the following information in the email:

- Full name
- Hopkins ID
- email address
- phone number
- course number
- course section
- course title
- term

Required Courses

Code	Title	Credits
PH.140.611	Statistical Reasoning in Public Health I	3
PH.140.612	Statistical Reasoning in Public Health II	3
PH.140.613	Data Analysis Workshop I ¹	2
PH.140.614	Data Analysis Workshop II ¹	2
PH.180.628	Introduction To Environmental and Occupational Health Law	4
PH.182.613	Exposure Assessment Techniques for Health Risk Management	3
PH.182.614	Environmental and Occupational Monitoring ¹	5
PH.182.615	Airborne Particles	4
PH.182.621	Introduction to Ergonomics	4
PH.182.622	Ventilation and Hazard Control	4
PH.182.623	Occupational Health Management	3
PH.182.625	Principles of Occupational and Environmental Hygiene	4
PH.182.637	Noise and Other Physical Agents in the Environment	4
PH.182.810	MS Field Placement	1
PH.182.850	EHE MS Essay ²	1
PH.182.860	Special Studies Seminar in Occupational and Environmental Hygiene ²	1
PH.187.610	Public Health Toxicology	4
PH.188.680	Fundamentals of Occupational Health	3
PH.188.681	Onsite Evaluation of Workplace and Occupational Health Programs ¹	5
PH.305.615	Occupation Injury Prevention and Safety Policy and Practice	2
PH.317.600	Introduction to the Risk Sciences and Public Policy	4

PH.317.610	Risk Policy, Management and Communication	3
PH.340.721	Epidemiologic Inference in Public Health I	5

¹ This course is held on-campus

² Two credits are required to complete the degree requirements. Register for this course twice.

Core Curriculum 2023 - 2024 *

Code	Title	Credits
First Term (Online) Monday, 8/28/2023 - Monday, 10/23/2023		
PH.188.680	Fundamentals of Occupational Health	3
PH.140.611	Statistical Reasoning in Public Health I	3
PH.182.622	Ventilation and Hazard Control	4
Second Term (Online) Wednesday, 10/26/2023 - Friday, 12/22/2023		
PH.187.610	Public Health Toxicology	4
PH.140.612	Statistical Reasoning in Public Health II	3
PH.182.623	Occupational Health Management	3
PH.182.621	Introduction to Ergonomics	4
Winter Institute (East Baltimore Campus) Wednesday, 1/2/2024 - Friday, 1/19/2024		
PH.140.613	Data Analysis Workshop I	2
PH.140.614	Data Analysis Workshop II	2
Third Term (Online) Monday, 1/22/2024 - Friday, 3/15/2024		
PH.317.600	Introduction to the Risk Sciences and Public Policy	4
PH.340.721	Epidemiologic Inference in Public Health I	5
PH.182.615	Airborne Particles	4
PH.182.637	Noise and Other Physical Agents in the Environment	4
PH.182.613	Exposure Assessment Techniques for Health Risk Management	3
Fourth Term (Online) Monday, 3/25/2024 - Friday, 5/17/2024		
PH.182.625	Principles of Occupational and Environmental Hygiene	4
PH.305.615	Occupation Injury Prevention and Safety Policy and Practice	2
PH.317.610	Risk Policy, Management and Communication	3
PH.180.628	Introduction To Environmental and Occupational Health Law	4
PH.182.860	Special Studies Seminar in Occupational and Environmental Hygiene ²	1
Summer Institute (East Baltimore Campus) Dates to be Announced		
PH.182.614	Environmental and Occupational Monitoring	5
PH.188.681	Onsite Evaluation of Workplace and Occupational Health Programs	5
Other ¹		
PH.182.810	MS Field Placement	1
PH.182.850	EHE MS Essay ²	1

¹ Successful completion of 3 credits related to the Independent Professional Project (IPP) is required for completion of the program. The related course requirements will be undertaken over several terms. Students should register for these classes on the following basis: 1 credit will be awarded for 182.810 upon submission of the IPP proposal and completion of the IPP data collection; 1 credit will be awarded for 182.850 upon submission of a completed draft of the essay; and

1 credit will be awarded for 182.850 upon submission of a final draft of the essay and the formal presentation of a seminar on the IPP to faculty and fellow students. The registration timeline for these courses is decided between the student and their adviser.

² Two credits are required to complete the degree requirements. Register for this course twice.

* Some of the curricular requirements for the Occupational and Environmental Hygiene, MS shifted in the 2023-2024 academic year and were not captured in the catalogue. The summary of these changes is available in the catalogue addendum (<https://e-catalogue.jhu.edu/amendments/>).

Program Educational Objectives

The MS OEH Educational Objectives focus on objectives that our graduates are expected to attain within a few years of graduation. The objectives were reviewed and approved by our external advisory committee on 2/18/2022 and are stated as follows:

The Program in Occupational and Environmental Hygiene educates students to think critically, communicate clearly, and collaborate effectively as they apply the fundamental scientific principles of industrial hygiene to environmental and workplace problems. We emphasize the importance of intellectual growth, professional ethics, and service to society.

The OEH Program has four broad educational objectives. Our efforts are focused on enabling students to:

1. Anticipate, recognize, evaluate, and control factors in the workplace and the environment that may cause illness, injury, or impairment;
2. Build a successful career and obtain professional certification using the comprehensive education and training received;
3. Integrate industrial hygiene techniques, biostatistics, epidemiology, management, and environmental health concepts into a broader occupational/environmental health practice; and
4. Pursue continuing education in research and professional practice of Occupational and Environmental Health.

General Student Outcomes

Students graduating with a MS in Occupational and Environmental Hygiene will have demonstrated an ability to:

1. Identify, formulate, and solve broadly defined technical or scientific problems by applying knowledge of mathematics and science and/or technical topics to areas relevant to the discipline;
2. Formulate or design a system, process, procedure, or program to meet desired needs;
3. Develop and conduct experiments or test hypotheses, analyze and interpret data and use scientific judgement to draw conclusions;
4. Communicate effectively with a range of audiences;
5. Understand ethical and professional responsibilities and the impact of technical and/or scientific solutions in global, economic, environmental, and societal contexts; and
6. Function effectively on teams that establish goals, plan tasks, meet deadlines, and analyze risk and uncertainty.

Students will undertake an appropriate professional experience tailored to the needs of the individual student and complete an Independent

Professional Project (IPP) and present the results of the IPP in written form and orally.

Program Outcomes

1. Understand physiological and/or toxicological interactions of physical, chemical, biological, and ergonomic agents, factors, and /or stressors with the human body;
2. Anticipate, recognize, evaluate, and control potentially hazardous agents, conditions, and practices in workplace settings;
3. Apply fundamental exposure assessment techniques (both qualitative and quantitative) in workplace settings;
4. Perform industrial hygiene data interpretation of new and existing data including statistical and epidemiological principles;
5. Apply appropriate business and managerial practices to workplace settings;
6. Understand, interpret, and apply occupational and environmental standards and regulations; and
7. Understand fundamental aspects of safety and environmental health. Students will undertake an appropriate professional experience tailored to the needs of the individual student and complete an Independent Professional Project (IPP) and present the results of the IPP in written form and orally.