

# ENVIRONMENTAL ENGINEERING, MASTER OF ENVIRONMENTAL ENGINEERING

The degree and certificates offered under this program emphasize the design of environmental processes, infrastructures, remediation technologies, and treatment processes.

## Admission Requirements

Applicants (degree seeking and special students) must meet the general requirements for admission to graduate study, as outlined in the Admission Requirements (<http://e-catalog.jhu.edu/engineering/engineering-professionals/admission-requirements/>) section. In order to be admitted into the Master of Environmental Engineering program, applicants need to hold a degree issued by a program accredited by the Engineering Accreditation Commission (EAC) of ABET, <http://www.abet.org> (<http://www.abet.org>).

The applicant's prior education must also include successful completion of:

1. mathematics courses that include a calculus sequence and differential equations and
2. successful completion of a course in fluid mechanics or hydraulics is strongly recommended.

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. Missing prerequisites may be completed with Johns Hopkins Engineering or at another regionally accredited institution. Applicants typically have earned a grade point average of at least 3.0 on a 4.0 scale (B or above) in their undergraduate studies. Transcripts from all college studies must be submitted. When reviewing an application, the candidate's academic and professional background will be considered.

Applicants with an undergraduate degree in natural sciences may enroll under provisional status to complete additional undergraduate coursework in engineering fundamentals and design prior to full admission to the program.

## Program Requirements

Ten courses must be completed within five years. The curriculum consists of five courses from the Environmental Engineering program and five electives.

Electives may be selected from any of the three environmental areas of study: Environmental Engineering (p. 1), Environmental Engineering and Science (<http://e-catalog.jhu.edu/engineering/engineering-professionals/environmental-engineering-science-management-programs/environmental-engineering-science-master/#requirementstext>), or Environmental Planning and Management (<http://e-catalog.jhu.edu/engineering/engineering-professionals/environmental-engineering-science-management-programs/environmental-planning-management-master-science/#requirementstext>), subject to prerequisite

restrictions. Only one C-range grade (C+, C, or C-) can count toward the master's degree.

All course selections are subject to advisor approval. Except for the Focus Areas, any deviation from this program, including transfer of courses and any other requisites specified in the student's admission letter, will not be approved by the program chair.

## Courses

Code	Title	Credits
<b>Required Course</b>		
EN.575.604	Principles of Environmental Engineering <sup>1</sup>	3
<b>Environmental Engineering</b>		
Select a minimum of five of the following:		
EN.575.605	Principles of Water and Wastewater Treatment	3
EN.575.606	Water Supply and Wastewater Collection	3
EN.575.607	Radioactive Waste Management	3
EN.575.620	Solid Waste Engineering & Management	3
EN.575.623	Industrial Processes and Pollution Prevention	3
EN.575.703	Environmental Biotechnology	3
EN.575.706	Biological Processes for Water & Wastewater Treatment	3
EN.575.715	Subsurface Fate and Contaminant Transport	3
EN.575.721	Air Quality Control Technologies	3
EN.575.741	Membrane Filtration Systems and Applications in Water and Wastewater Treatment	3
EN.575.742	Hazardous Waste Engineering and Management	3
EN.575.745	Physical and Chemical Processes for Water and Wastewater Treatment	3
EN.575.746	Water and Wastewater Treatment Plant Design	3
EN.575.761	Measurement and Pseudo-measurement in the Environmental Arena	3
EN.575.801	Independent Project	3

<sup>1</sup> Required only for students who do not possess an undergraduate degree in Environmental Engineering, Science, Management, or a related discipline. EN.575.604 Principles of Environmental Engineering will count toward the degree requirements as a core course for the Master of Environmental Engineering and as an elective course for other programs.

## Optional Focus Areas:

Focus areas are not available for students pursuing certificates.

Code	Title	Credits
<b>Focus Areas</b>		
Environmental and Occupational Health (p. 1)		
Energy Policy and Climate (p. 2)		
Energy Sciences and Policy (p. 2)		
Ocean and Coastal Engineering (Only available in the Master of Environmental Engineering)		

### Environmental and Occupational Health

To accommodate students interested in the human health aspects of the environment, a focus area in "Environmental and Occupational Health" is offered within all three EP environmental master's degree programs—the Master of Environmental Engineering, the Master of Science in

Environmental Engineering and Science, and the Master of Science in Environmental Planning and Management. Students must take at least 14 BSPH “term” credits from the EHE courses listed below to substitute for an equivalent of 9 EP semester credits (three semester courses) of their elective courses required for the designated 30-credit EP master’s degree program. Please note that 1 EP semester credit equals 1.5 BSPH term credits.

Focus areas are not available for students pursuing certificates.

Code	Title	Credits
<b>Bloomberg School of Public Health Courses</b>		
PH.180.601	Environmental Health	5
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.187.610	Public Health Toxicology	4
PH.188.680	Fundamentals of Occupational Health	3

### Energy Policy and Climate

To attain this focus area students must take at least 9 credits (3 courses) in the Advanced Academic Programs - Energy Policy and Climate Program - from the core courses listed below to substitute for an equivalent of 9 EP credits (3 courses) of their elective courses required for the designated 30-credit (10 courses) EP master’s degree program. Homepage: <https://advanced.jhu.edu/academics/graduate-degree-programs/energy-policy-and-climate/>

Focus areas are not available for students pursuing certificates.

Code	Title	Credits
<i>Energy Policy and Climate Focus Area</i>		
AS.425.615	Understanding Public Attitudes for the Communication of Climate and Energy Policy	3
AS.425.624	Wind Energy: Science, Technology and Policy	3
AS.425.625	Solar Energy: Science, Technology & Policy	3
AS.425.628	Renewable Energy Project Development and Finance	3
AS.425.636	Emerging Energy Technologies and Applications	3

### ENERGY SCIENCES AND POLICY

To attain this focus area, students must take at least 9 credits (3 courses) in the Advanced Academic Programs - Environmental Sciences and Policy Program - from the core courses listed above to substitute for an equivalent of 9 EP credits (3 courses) of their elective courses required for the designated 30-credit (10 courses) EP master’s degree program. Homepage: <https://advanced.jhu.edu/academics/graduate-degree-programs/environmental-sciences-and-policy/>

Focus areas are not available for students pursuing certificates.

Code	Title	Credits
<i>Environmental Sciences and Policy Focus Area</i>		
AS.420.605	Maritime Law and the Environment	3
AS.420.666	Community Development and Sustainability in developing countries	3

AS.420.609	Agroecology	3
AS.420.624	Ocean Stewardship and Sustainability	3
AS.420.643	U.S. Environmental History	3
AS.420.650	International Environmental Policy	3

### Ocean and Coastal Engineering

The Ocean and Coastal Engineering focus area is available to the students studying in the Master of Environmental Engineering degree program. To attain this focus area students must take at least 9 credits (3 courses) in the Engineering for Professional, Civil Engineering - from the courses listed below to substitute for equivalent of 9 credits (3 courses) of their elective courses required for the designated 30-credit (10 courses) EP master’s degree program.

Focus areas are not available for students pursuing certificates.

Code	Title	Credits
EN.565.606	Geotechnical Engineering Principles	3
EN.565.680	Marine Geotechnical Engineering	3
EN.565.682	Design of Ocean Structures	3
EN.565.684	Port & Harbor Engineering	3
EN.565.686	Sustainable Coastal Engineering	3
EN.565.734	Wind Engineering	3

Please refer to the course schedule ([ep.jhu.edu/schedule](https://ep.jhu.edu/schedule) (<https://apps.ep.jhu.edu/schedule/search/>)) published each term for exact dates, times, locations, fees, and instructors.