

Environmental Engineering

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Mission

Consistent with the Mission Statements of Manhattan College and the School of Engineering, the mission of the Environmental Engineering Graduate Program is to provide engineers and scientists with advanced training in environmental process engineering, water quality assessment modeling, geoenvironmental engineering, and environmental management. Emphasis is placed on current applications, innovative technologies/processes and the underlying theoretical basis for sound engineering practice, in keeping with the societal need for maintaining and improving environmental quality and public health.

Objectives

Upon program completion, Environmental Engineering graduates will be able to (1) Meet expectations of employers of Environmental Engineers, especially those in the tri-state area, and (2) Continue their career development through life-long learning and professional activities.

Admission Requirements

Master of Engineering (Environmental Engineering) Degree: Applicants must possess a baccalaureate degree in engineering from a program accredited by the Engineering Accreditation Commission of ABET, Inc., or from a recognized foreign institution. A minimum grade point average of 3.0 is normally required. In addition, applicants must present adequate preparation in two courses in chemistry, one course in calculus-based physics, two courses in calculus, differential equations, and one course in computer applications, statistics, fluid mechanics, a biological science, an earth science, and principles of environmental engineering. These undergraduate courses must be completed with a minimum grade point average of 3.00 with no single course grade lower than a C.

Master of Science in Environmental Engineering Degree: Applicants must possess a baccalaureate degree in engineering or science. A minimum grade point average of 3.0 is normally required. In addition, applicants must present adequate preparation in two courses in chemistry, one course in physics, two courses in calculus, differential equations, one course in computer applications, statistics, fluid mechanics, a biological science or an earth science, and principles of environmental engineering. These undergraduate courses must be completed with a minimum grade point average of 3.0 with no single course grade lower than a C.

Prerequisite courses will not satisfy any requirements for the Master of Science in Environmental Engineering degree. Generally, students must complete all prerequisite courses before they may register for the designated graduate courses. Exceptions

to either the 3.0 minimum undergraduate GPA requirement or the need to complete prerequisites prior to registering for graduate courses may be approved on a case-by-case basis upon the recommendation of the Environmental Engineering Graduate Program Director and the approval of the Dean of Engineering.

Degree Requirements

Master of Environmental Engineering Degree

ABET Accredited Master's of Environmental Engineering Degree requires ME designated students to complete a minimum of thirty credit hours of graduate coursework with a cumulative GPA of 3.0 or better. Below are the course requirements for completion of the ME Degree:

Six (6) Required Courses		18
ENVG 505	Surface Water Quality Modeling	3
ENVG 506	Water and Wastewater Treatment Processes	3
ENVG 508	Environmental Chemistry	3
ENVG 739	Experimental Analysis in Environmental Engineering	3
ENVG 718	Biological Treatment Wastewaters	3
ENVG 736	Environmental Advanced Unit Operations	3
Minimum of two additional upper-level engineering design courses from the following:		6
ENVG 703	Environmental Fate and Effects of Toxic Contaminants	3
ENVG 704	Advanced Water Modeling Quality	3
ENVG 712	Advanced Geohydrology	3
ENVG 721	Environmental Sustainability: Water Reuse & Resource Recovery	3
ENVG 746		3
Two technical electives may be taken from the courses listed above that were not taken to fulfill other requirements and from those listed below. Other non-ENVG courses may be taken with approval of the Program Director		6
ENVG 507	Groundwater	3
ENVG 509	Environmental GeoChemistry	3
ENVG 510	Hazardous Waste Management	3
ENVG 530	Water Infrastructure Systems Analytics	3
ENVG 702	Air Quality Analysis	3
ENVG 706	Water Chemistry	3
ENVG 708	Environmental Biotechnology	3
ENVG 710	Environmental Organic Chemistry	3
ENVG 722	Subsurface Bioremediation	3
ENVG 744	Emerging Issues in Environmental Engineering and Public Health	3
ENVG 731	Special Topics	3

ENVG 732	Thesis	6
Total Credits		30

Master of Science in Environmental Engineering Degree

Students must complete a minimum of thirty credit hours of graduate coursework with a cumulative GPA of 3.0 or better.

Three (3) Required Courses 9

ENVG 505	Surface Water Quality Modeling	3
ENVG 506	Water and Wastewater Treatment Processes	3
ENVG 508	Environmental Chemistry	3

Minimum of three upper-level engineering design courses from the following: 9

ENVG 703	Environmental Fate and Effects of Toxic Contaminants	3
ENVG 704	Advanced Water Modeling Quality	3
ENVG 712	Advanced Geohydrology	3
ENVG 718	Biological Treatment Wastewaters	3
ENVG 721	Environmental Sustainability: Water Reuse & Resource Recovery	3
ENVG 736	Environmental Advanced Unit Operations	3
ENVG 739	Experimental Analysis in Environmental Engineering	3
ENVG 746		3

Four technical electives may be selected from the courses listed above that were not taken to fulfill other requirements and from those listed below. Up to 2 courses outside the ENVG offerings (ie. CEEN or COMG) may be taken with the approval of the Program Director. 12

ENVG 507	Groundwater	3
ENVG 509	Environmental GeoChemistry	3
ENVG 510	Hazardous Waste Management	3
ENVG 530	Water Infrastructure Systems Analytics	3
ENVG 702	Air Quality Analysis	3
ENVG 706	Water Chemistry	3
ENVG 708	Environmental Biotechnology	3
ENVG 710	Environmental Organic Chemistry	3
ENVG 722	Subsurface Bioremediation	3
ENVG 744	Emerging Issues in Environmental Engineering and Public Health	3
ENVG 731	Special Topics	3
ENVG 732	Thesis	6

Total Credits 30

Focus Areas

Focus areas consisting of prescribed, specific courses are available through the environmental engineering graduate program. Unless otherwise noted, courses in these

programs may be applied to a Master's of Engineering or a Master's of Science Degree in Environmental Engineering. For a list of focus areas, please go to the Manhattan College website (<https://manhattan.edu/academics/graduate-programs/environmental-engineering.php>).