

# MASTER OF CIVIL AND ENVIRONMENTAL ENGINEERING (MCEE) DEGREE IN THE FIELD OF ENVIRONMENTAL ENGINEERING

## Program Learning Outcomes for the MCEE Degree in the field of Environmental Engineering

Upon completing the MCEE degree in the field of Environmental Engineering, students will be able to:

1. Demonstrate a solid foundation in civil and environmental engineering at the graduate level.
2. Demonstrate professional written and oral communication skills.

## Requirements for the MCEE Degree in the field of Environmental Engineering

The MCEE degree is a non-thesis master’s degree. For general university requirements, please see [Non-Thesis Master’s Degrees](https://ga.rice.edu/graduate-students/academic-policies-procedures/regulations-procedures-non-thesis-masters-degrees/) (https://ga.rice.edu/graduate-students/academic-policies-procedures/regulations-procedures-non-thesis-masters-degrees/). For additional requirements, regulations, and procedures for all graduate programs, please see [All Graduate Students](https://ga.rice.edu/graduate-students/academic-policies-procedures/regulations-procedures-all-degrees/) (https://ga.rice.edu/graduate-students/academic-policies-procedures/regulations-procedures-all-degrees/). Students pursuing the MCEE degree in the field of Environmental Engineering must complete:

- A minimum of 11 courses (30-32 credit hours, depending on course selection) to satisfy degree requirements.
- A minimum of 30 credit hours of graduate-level study (graduate semester credit hours, coursework at the 500-level or above).
- A minimum of 24 graduate semester credit hours must be taken at Rice University.
- A minimum of 24 graduate semester credit hours must be taken in standard or traditional courses (with a course type of lecture, seminar, laboratory, lecture/laboratory).
- A minimum residency enrollment of one fall or spring semester of part-time graduate study at Rice University.
- A maximum of 2 courses (6 graduate semester credit hours) from transfer credit. For additional departmental guidelines regarding transfer credit, see the [Policies](#) (p. 2) tab.
- A minimum of one graduate seminar (CEVE 601 or CEVE 602).
- A final project (CEVE 590).
- A minimum overall GPA of 2.67 or higher in all Rice coursework.
- A minimum GPA of 3.00 or higher in all Rice coursework that satisfies requirements for the non-thesis master’s degree.

The Master of Civil and Environmental Engineering (MCEE) degree is a professional non-thesis master’s degree. Students who have a BS or BA degree in any field of engineering or related study may apply. Depending

on their background, some students may need to fulfill prerequisites or take remedial engineering courses to earn the MCEE degree. For more information, see the *Professional Master’s Program* tab on the [department website](https://cee.rice.edu/academics/graduate-programs/master-civil-and-environmental-engineering/) (https://cee.rice.edu/academics/graduate-programs/master-civil-and-environmental-engineering/).

The courses listed below satisfy the requirements for this degree program. In certain instances, courses not on this official list may be substituted upon approval of the program’s academic advisor or, where applicable, the department or program’s Director of Graduate Studies. Course substitutions must be formally applied and entered into Degree Works by the department or program’s Official Certifier (https://registrar.rice.edu/facstaff/degreeworks/officialcertifier/). Additionally, these course substitutions must be approved by the Office of Graduate and Postdoctoral Studies. Students and their academic advisors should identify and clearly document the courses to be taken.

### Summary

Code	Title	Credit Hours
Total Credit Hours for the MCEE Degree in the field of Environmental Engineering		30-32

### Degree Requirements

Code	Title	Credit Hours
<b>Core Requirements</b>		
Advanced Coursework		18
<i>Select 6 courses from the following:</i>		
CEVE 502	SUSTAINABLE DESIGN	
CEVE 509	HYDROLOGY AND WATER RESOURCES ENGINEERING	
CEVE 511	ATMOSPHERIC CHEMISTRY AND CLIMATE	
CEVE 514	COASTAL HAZARDS IN A CHANGING CLIMATE	
CEVE 518	ENVIRONMENTAL HYDROGEOLOGY	
CEVE 534	FATE AND TRANSPORT OF CONTAMINANTS IN THE ENVIRONMENT	
CEVE 535	PHYSICAL CHEMICAL PROCESSES FOR WATER QUALITY CONTROL	
CEVE 536	ENVIRONMENTAL BIOTECHNOLOGY AND BIOREMEDIATION	
CEVE 543	DATA-DRIVEN MODELS FOR CLIMATE HAZARD	
CEVE 550	ENVIRONMENTAL ORGANIC CHEMISTRY	
<b>Seminar</b>		
<i>Select 1 course from the following:</i>		
CEVE 601	SEMINAR	1
CEVE 602	SEMINAR	
<b>Elective Requirements</b>		
Engineering Science and Technology		
<i>Select 2 courses from the following:</i>		
		6

BIOS 558	FUNDAMENTALS OF QUANTITATIVE ENVIRONMENTAL HEALTH RISK ASSESSMENT
CEVE 501	CHEMISTRY FOR ENVIRONMENTAL ENGINEERING AND SCIENCE
CEVE 510	PRINCIPLES OF ENVIRONMENTAL ENGINEERING
CEVE 516	FUNDAMENTALS OF GROUNDWATER FLOW
CEVE 520	ENVIRONMENTAL REMEDIATION RESTORATION
CEVE 523	APPLIED SUSTAINABLE PLANNING AND DESIGN
CEVE 526	SMART MATERIALS FOR THE ENVIRONMENT
CEVE 543	DATA-DRIVEN MODELS FOR CLIMATE HAZARD
CEVE 544	ENVIRONMENTAL MICROBIOLOGY AND MICROBIAL ECOLOGY
CEVE 592	MODELING AND ANALYSIS OF NETWORKED SYSTEMS
CEVE 684 / STAT 684	ENVIRONMENTAL RISK ASSESSMENT & HUMAN HEALTH
EEPS 584	DATA SCIENCE ENVIRONMENTAL AND GEOSCIENCES
EEPS 632	FLUID FLOW IN FRACTURED ROCKS
RCEL 506	APPLIED STATISTICS AND DATA SCIENCE FOR ENGINEERING LEADERS
STAT 685	ENVIRONMENTAL STATISTICS AND DECISION MAKING
Sustainable Resource Management	
<i>Select 1 course from the following:</i> 3-4	
ANTH 532	THE SOCIAL LIFE OF CLEAN ENERGY
BIOS 580	SUSTAINABLE DEVELOPMENT AND REPORTING
CEVE 505 / ENGI 505	ENGINEERING ECONOMICS AND PROJECT MANAGEMENT
CEVE 506	INTRODUCTION TO ENVIRONMENTAL LAW
CEVE 507	ENERGY AND THE ENVIRONMENT
CEVE 528 / ENGI 528	ENGINEERING ECONOMICS
CEVE 529 / ENGI 529	ETHICS AND ENGINEERING LEADERSHIP
ECON 601	ENERGY ECONOMICS I
ENGI 501	WORKPLACE COMMUNICATION FOR PROFESSIONAL MASTER'S STUDENTS IN ENGINEERING
NSCI 511	SCIENCE POLICY, AND ETHICS
NSCI 610 / ENGI 610	MANAGEMENT FOR SCIENCE AND ENGINEERING
RCEL 501	ENGINEERING MANAGEMENT & LEADERSHIP THEORY AND APPLICATION
RCEL 502	ENGINEERING PROJECT MANAGEMENT

RCEL 503	ENGINEERING PRODUCT MANAGEMENT IN INDUSTRY 4.0
RCEL 504	ETHICAL-TECHNICAL LEADERSHIP
RCEL 505	ENGINEERING ECONOMICS FOR ENGINEERING LEADERS
RCEL 542	PROFESSIONAL COMMUNICATION FOR ENGINEERING LEADERS
<b>MCEE Final Project</b>	
CEVE 590	MCEE SPECIAL STUDY <sup>1</sup> 2-3
<b>Total Credit Hours</b>	<b>30-32</b>

### Footnotes and Additional Information

<sup>1</sup> The professional master's final project is overseen by a Civil and Environmental Engineering department faculty member.

## Policies for the MCEE Degree in the field of Environmental Engineering

### Department of Civil and Environmental Engineering Graduate Program Handbook

The General Announcements (GA) is the official Rice curriculum. As an additional resource for students, the department of Civil and Environmental Engineering publishes a graduate program handbook, which can be found here: [https://gradhandbooks.rice.edu/2024\\_25/Civil\\_Environmental\\_Engineering\\_Graduate\\_Handbook.pdf](https://gradhandbooks.rice.edu/2024_25/Civil_Environmental_Engineering_Graduate_Handbook.pdf).

### Admission

Applicants pursuing graduate education in structural engineering, structural mechanics, and infrastructure systems engineering should have a BS in Civil Engineering with a significant emphasis on structural engineering, but students with other undergraduate degrees may apply if they have adequate preparation in mathematics, mechanics, and structural analysis and design.

Applicants pursuing graduate education in environmental engineering or hydrology should have a BS or BA in related areas of science and engineering and preparation in mathematics, science, and engineering or related courses. A BS degree in engineering or a degree in natural science is preferred.

Admission into a professional program is granted separately from admission into a research and thesis program. Professional degree programs terminate when the degree is awarded. Students who wish to continue graduate study after completing a professional program must apply for admission into a research program.

### Transfer Credit

For Rice University's policy regarding transfer credit, see [Transfer Credit \(https://ga.rice.edu/graduate-students/academic-policies-procedures/regulations-procedures-all-degrees/#transfer\)](https://ga.rice.edu/graduate-students/academic-policies-procedures/regulations-procedures-all-degrees/#transfer). Some departments and programs have additional restrictions on transfer credit. Requests for transfer credit must be approved for Rice equivalency by the appropriate academic department offering the Rice equivalent course (corresponding to the subject code of the course content) and by the Office of Graduate and Postdoctoral Studies (GPS). Students are encouraged to meet with their academic program's advisor when considering transfer credit possibilities.

## Departmental Transfer Credit Guidelines

Students pursuing the MCEE degree in the field of Civil Engineering or Environmental Engineering should be aware of the following departmental transfer credit guideline:

- No more than 2 courses (6 credit hours) of transfer credit from U.S. or international universities of similar standing as Rice may apply towards the degree.

## Additional Information

For additional information, please see the Civil and Environmental Engineering website: <https://cee.rice.edu/>.

## Opportunities for the MCEE Degree in the field of Environmental Engineering

### Fifth-Year Master's Degree Option for Rice Undergraduate Students

In certain situations and with some terminal master's degree programs, Rice students have an option to pursue a master's degree by adding an additional fifth year to their four years of undergraduate studies.

Advanced Rice undergraduate students in good academic standing typically apply to the master's degree program during their junior or senior year. Upon acceptance, depending on course load, financial aid status, and other variables, they may then start taking some required courses of the master's degree program. A plan of study will need to be approved by the student's undergraduate major advisor and the master's degree program director.

As part of this option and opportunity, Rice undergraduate students:

- must complete the requirements for a bachelor's degree and the master's degree independently of each other (i.e. no course may be counted toward the fulfillment of both degrees).
- should be aware there could be financial aid implications if the conversion of undergraduate coursework to that of graduate level reduces their earned undergraduate credit for any semester below that of full-time status (12 credit hours).
- more information on this *Undergraduate - Graduate Concurrent Enrollment* opportunity, including specific information on the registration process can be found [here \(https://ga.rice.edu/undergraduate-students/academic-opportunities/undergraduate-graduate-concurrent-enrollment/\)](https://ga.rice.edu/undergraduate-students/academic-opportunities/undergraduate-graduate-concurrent-enrollment/).

Rice undergraduate students completing studies in science and engineering may have the option to pursue the Master of Civil and Environmental Engineering (MCEE) degree. For additional information, students should contact their undergraduate major advisor and the (MCEE) chair of the department graduate studies committee.

## George R. Brown School of Engineering and Computing Scholarships for Professional Master's Degrees in Engineering

The George R. Brown School of Engineering and Computing Scholarships for Professional Master's Degrees in Engineering were established by the Dean of the School of Engineering and Computing to encourage outstanding Rice undergraduate engineering students to pursue a professional master's degree at Rice.

## Rice Global Forum (RGF)

The Rice Global Forum (RGF) is a group of industry professionals plus Rice faculty who gather regularly to discuss topics that define their interests. They sponsor the Engineering Competition each year and give out scholarships that are derived from membership dues. The scholarships are geared toward professional master's and terminal research master's (MS) students.

## Additional Information

For additional information, please see the Civil and Environmental Engineering website: <https://cee.rice.edu/>.