# 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/). 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/).

Students pursuing the MCEE degree in the field of Environmental Engineering must complete:

- A minimum of 11 courses (30 credit hours) 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](https://ga.rice.edu/graduate-students/academic-policies-procedures/regulations-procedures-all-degrees/) 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 [department website](http://www.ceve.rice.edu/).

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 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

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total Credit Hours for the MCEE Degree in the field of Environmental Engineering</td>
<td>30</td>
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## Degree Requirements

### Core Requirements

#### Advanced Coursework

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>CEVE 502</td>
<td>SUSTAINABLE DESIGN</td>
<td>3</td>
</tr>
<tr>
<td>CEVE 509</td>
<td>HYDROLOGY AND WATER RESOURCES ENGINEERING</td>
<td>3</td>
</tr>
<tr>
<td>CEVE 511</td>
<td>ATMOSPHERIC CHEMISTRY AND CLIMATE</td>
<td>3</td>
</tr>
<tr>
<td>CEVE 534</td>
<td>FATE AND TRANSPORT OF CONTAMINANTS IN THE ENVIRONMENT</td>
<td>3</td>
</tr>
<tr>
<td>CEVE 536</td>
<td>ENVIRONMENTAL BIOTECHNOLOGY AND BIOREMEDIATION</td>
<td>3</td>
</tr>
<tr>
<td>CEVE 550</td>
<td>ENVIRONMENTAL ORGANIC CHEMISTRY</td>
<td>3</td>
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</tbody>
</table>

#### Seminar

Select 1 from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>CEVE 601</td>
<td>SEMINAR</td>
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</tr>
<tr>
<td>CEVE 602</td>
<td>SEMINAR</td>
<td>1</td>
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</tbody>
</table>

## Elective Requirements

### Engineering Science and Technology

Select 2 from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEVE 501</td>
<td>CHEMISTRY FOR ENVIRONMENTAL ENGINEERING AND SCIENCE</td>
<td>3</td>
</tr>
<tr>
<td>CEVE 504</td>
<td>ATOMSPHERIC PARTICULATE MATTER</td>
<td>3</td>
</tr>
<tr>
<td>CEVE 508</td>
<td>INTRODUCTION TO AIR POLLUTION CONTROL</td>
<td>3</td>
</tr>
<tr>
<td>CEVE 510</td>
<td>PRINCIPLES OF ENVIRONMENTAL ENGINEERING</td>
<td>3</td>
</tr>
<tr>
<td>CEVE 518</td>
<td>ENVIRONMENTAL HYDROGEOLOGY</td>
<td>3</td>
</tr>
<tr>
<td>CEVE 520</td>
<td>ENVIRONMENTAL REMEDIATION RESTORATION</td>
<td>3</td>
</tr>
<tr>
<td>CEVE 535</td>
<td>PHYSICAL CHEMICAL PROCESSES FOR WATER QUALITY CONTROL</td>
<td>3</td>
</tr>
<tr>
<td>CEVE 544</td>
<td>ENVIRONMENTAL MICROBIOLOGY AND MICROBIAL ECOLOGY</td>
<td>3</td>
</tr>
</tbody>
</table>
CEVE 592  MODELING AND ANALYSIS OF NETWORKED SYSTEMS
EEPS 584  DATA SCIENCE ENVIRONMENTAL AND GEOSCIENCES
EEPS 632  QUANTITATIVE HYDROGEOLOGY
STAT 685  ENVIRONMENTAL STATISTICS AND DECISION MAKING

Sustainable Resource Management
Select 1 from the following:

ANTH 532  THE SOCIAL LIFE OF CLEAN ENERGY
BIOS 580  SUSTAINABLE DEVELOPMENT AND REPORTING
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
ECN 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

MCEE Final Project

CEVE 590  MCEE SPECIAL STUDY

Total Credit Hours 30

Footnotes and Additional Information
1 The professional masters final project is overseen by a Civil and Environmental Engineering department faculty member.

Admission

Applicants pursuing graduate education in structural engineering, structural mechanics, and geotechnical 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). Some departments and programs have additional restrictions on transfer credit. 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 guidelines:

• 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.
• Request for transfer credit will be considered by the program director on an individual case-by-case basis.

Additional Information

For additional information, please see the Civil and Environmental Engineering website: https://ceve.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/).
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 Scholarships for Professional Master’s Degrees in Engineering**

The George R. Brown School of Engineering Scholarships for Professional Master’s Degrees in Engineering were established by the Dean of the School of Engineering 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://ceve.rice.edu/](https://ceve.rice.edu/)