

BACHELOR OF SCIENCE IN CIVIL ENGINEERING (BSCE) DEGREE

The program leading to the BS in Civil Engineering is accredited by the Engineering Accreditation Commission of ABET, <https://www.abet.org>, under the General Criteria and the Civil and Similarly Named Engineering Program Criteria.

Program Learning Outcomes (Student Outcomes) for the BSCE Degree

Upon completing the BSCE degree, students will be able to demonstrate:

1. An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.
2. An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.
3. An ability to communicate effectively with a range of audiences.
4. An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.
5. An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.
6. An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.
7. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

Program Educational Objectives for the BSCE Degree

Within 3 to 5 years of graduation, graduates with a Bachelor of Science in Civil Engineering (BSCE) degree are expected to attain the following Program Educational Objectives (PEOs):

1. Excel in problem-solving and communication skills.
2. Achieve leadership positions in technical or managerial areas.
3. Demonstrate initiative and innovation in professional endeavors.
4. Demonstrate engagement in addressing ethical, social, environmental, and global concerns.
5. Remain engaged in continuing learning, including advanced degrees.
6. Obtain a Professional Engineering license, if appropriate.

Requirements for the BSCE Degree

For general university requirements, see [Graduation Requirements \(https://ga.rice.edu/undergraduate-students/academic-policies-procedures/graduation-requirements/\)](https://ga.rice.edu/undergraduate-students/academic-policies-procedures/graduation-requirements/). Students pursuing the BSCE degree must complete:

- A minimum of 34 courses (92 credit hours) to satisfy major requirements.
- A minimum of 125 credit hours to satisfy degree requirements.
- A minimum of 21 courses (57 credit hours) taken at the 300-level or above.
- The requirements for one area of specialization (see below for areas of specialization). When students declare the major (<https://ga.rice.edu/undergraduate-students/academic-opportunities/majors-minors-certificates/#text>) in Civil Engineering (associated with the BSCE degree), students must additionally identify and declare one of four areas of specialization, either in:
 - Area I - Environmental Engineering (p. 3): Air and water quality, transport theory, modeling, and energy, **or**
 - Area II - Hydrology and Water Resources (p. 3): Watershed and aquifer management, flood prediction, data analysis, GIS, and hydrologic modeling, **or**
 - Area III - Structural Engineering and Mechanics (p. 3): Structural analysis, mechanics, design, dynamics, and matrix method, **or**
 - Area IV - Urban Infrastructure, Reliability, and Management (p. 4): Transportation systems, complex urban systems, system reliability, soil mechanics, decision theory, engineering economics, and project management.
- A minimum of 14 courses (36 credit hours) from the General Math and Science courses.
- A minimum of 11 courses (26 credit hours) from the Core Requirements.

Because of the common core requirements, it is possible for students to change their area of specialization at any time, even after initially declaring the major. To do so, please contact the [Office of the Registrar \(registrar@rice.edu\)](mailto:registrar@rice.edu).

Civil and Environmental Engineering's innovative and challenging BSCE degree's engineering curriculum is designed to provide significant flexibility to the student. Specific details and typical course layouts by semester can be found on the [departmental website \(http://ceve.rice.edu/\)](http://ceve.rice.edu/).

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

Summary

Code	Title	Credit Hours
Total Credit Hours Required for the Major in Civil Engineering		92
Total Credit Hours Required for the BSCE Degree		125

Degree Requirements

Code	Title	Credit Hours
General Math and Science Requirements ¹		
BIOS 201	INTRODUCTORY BIOLOGY I ²	3
or EEPS 110	THE EARTH SYSTEM, ENVIRONMENT, AND SOCIETY	

CHEM 121 or CHEM 111	GENERAL CHEMISTRY I AP/OTH CREDIT IN GENERAL CHEMISTRY I	3
CHEM 123 or CHEM 113	GENERAL CHEMISTRY LABORATORY I AP/OTH CREDIT IN GENERAL CHEMISTRY LAB I	1
CMOR 220	INTRODUCTION TO ENGINEERING COMPUTATION	3
CMOR 302 or MATH 355 or MATH 354	MATRIX ANALYSIS LINEAR ALGEBRA HONORS LINEAR ALGEBRA	3
MATH 101 or MATH 105	SINGLE VARIABLE CALCULUS I AP/OTH CREDIT IN CALCULUS I	3
MATH 102 or MATH 106	SINGLE VARIABLE CALCULUS II AP/OTH CREDIT IN CALCULUS II	3
MATH 211 or MATH 220	ORDINARY DIFFERENTIAL EQUATIONS AND LINEAR ALGEBRA HONORS ORDINARY DIFFERENTIAL EQUATIONS	3
MATH 212 or MATH 232	MULTIVARIABLE CALCULUS HONORS MULTIVARIABLE CALCULUS	3
PHYS 101 & PHYS 103	MECHANICS (WITH LAB) and MECHANICS DISCUSSION ³	4
PHYS 102 & PHYS 104	ELECTRICITY & MAGNETISM (WITH LAB) and ELECTRICITY AND MAGNETISM DISCUSSION ⁴	4
STAT 310 / ECON 307	PROBABILITY AND STATISTICS ⁵	3
Core Requirements		
CEVE 101	FUNDAMENTALS OF CIVIL AND ENVIRONMENTAL ENGINEERING ⁶	2
CEVE 211 / MECH 211	ENGINEERING MECHANICS ⁶	3
CEVE 310	PRINCIPLES OF ENVIRONMENTAL ENGINEERING ⁶	3
CEVE 311 / MECH 311	MECHANICS OF SOLIDS AND STRUCTURES ⁶	3
CEVE 312	STRENGTH OF MATERIALS LAB ⁶	1
CEVE 315	URBAN WATER SYSTEMS: SOURCES, TREATMENT, DISTRIBUTION, RESOURCE RECOVERY AND REUSE	3
CEVE 363	APPLIED FLUID MECHANICS	3
CEVE 471	PRINCIPLES OF SOIL MECHANICS AND FOUNDATION ENGINEERING	3
CEVE 481	INTRODUCTION TO SENIOR DESIGN	1
CEVE 482	SENIOR DESIGN	3
<i>Select 1 from the following (depending on Area of Specialization):</i>		
CEVE 316	URBAN WATER SYSTEMS LAB: WATER QUALITY PARAMETERS AND TREATMENT TECHNIQUES	1
CEVE 472	SOIL MECHANICS LABORATORY WITH INDIVIDUAL PARTICIPATION	1

Area of Specialization

Select 1 from the following Areas of Specialization (see Areas of Specialization below):

- Area I - Environmental Engineering
- Area II - Hydrology and Water Resources

Area III - Structural Engineering and Mechanics	
Area IV - Urban Infrastructure, Reliability and Management	
Elective Requirements	
Select electives to fulfill the remaining BSCE degree requirements (see below for suggested elective courses) ⁸	
Total Credit Hours Required for the Major in Civil Engineering	92
Additional Credit Hours to Complete Degree Requirements [*]	2
University Graduation Requirements (https://ga.rice.edu/undergraduate-students/academic-policies-procedures/graduation-requirements/) [*]	31
Total Credit Hours	125

Footnotes and Additional Information

^{*} **Note:** University Graduation Requirements include 31 credit hours, comprised of Distribution Requirements (Groups I, II, and III), FWIS, and LPAP coursework. In some instances, courses satisfying FWIS or distribution requirements may additionally meet other requirements, such as the Analyzing Diversity (AD) requirement, or some of the student's declared major, minor, or certificate requirements. Additional Credit Hours to Complete Degree Requirements include general electives, coursework completed as upper-level, residency (hours taken at Rice), and/or any other additional academic program requirements.

¹ Or an equivalent approved course

² Students may substitute EEPS 110 with any departmental Earth, Environmental, and Planetary Sciences (EEPS) course offering.

³ The Civil and Environmental Engineering department has determined that credit awarded for PHYS 141 *CONCEPTS IN PHYSICS I* is not eligible for meeting the requirements of the Civil Engineering major.

⁴ The Civil and Environmental Engineering department has determined that credit awarded for PHYS 142 *CONCEPTS IN PHYSICS II* is not eligible for meeting the requirements of the Civil Engineering major.

⁵ Students may substitute STAT 310 with any departmental (STAT) course offering at the 300-level or above with the exception of STAT 305.

⁶ Courses that introduce fundamentals of civil and environmental engineering primarily targeted at students with diverse science, engineering, and humanities backgrounds (CEVE 101, CEVE 211, CEVE 310, CEVE 311, CEVE 312)

⁷ Students following Area of Specialization I-Environmental Engineering or Area of Specialization II-Hydrology and Water Resources must take CEVE 316 as a Core Requirement. Students following Area of Specialization III-Structural Engineering and Mechanics or Area of Specialization IV-Urban Infrastructure, Reliability and Management must take CEVE 472 as a Core Requirement.

⁸ See also the University Graduation Requirements footnote above denoted with an *.

Areas of Specialization

To fulfill the remaining BSCE degree requirements, students must complete a total of 10 courses (30 credit hours) from the four areas of specialization as follows:

- 8 courses (24 credit hours), consisting of a minimum of 2 courses (6 credit hours) from each of the four areas of specialization as breadth.

- 2 additional courses (6 credit hours) from one of the four areas of specialization for a total of 4 courses (12 credit hours, including breadth) in that specific area as an area of specialization.

- 2 courses (6 credit hours) from Area III - Structural Engineering and Mechanics
- 2 courses (6 credit hours) from Area IV - Urban Infrastructure, Reliability and Management

Area of Specialization: Area I - Environmental Engineering

All students must select a minimum of 2 courses (6 credit hours) from Area I. Students pursuing the Area I - Environmental Engineering area of specialization must complete:

- 4 courses (12 credit hours) from Area I - Environmental Engineering
- 2 courses (6 credit hours) from Area II - Hydrology and Water Resources
- 2 courses (6 credit hours) from Area III - Structural Engineering and Mechanics
- 2 courses (6 credit hours) from Area IV - Urban Infrastructure, Reliability and Management

Code	Title	Credit Hours
<i>Select 4 courses from the following:</i>		
CEVE 302 / ENGI 302	SUSTAINABLE DESIGN	12
CEVE 307 / EEPS 307 / ENST 307	ENERGY AND THE ENVIRONMENT	
CEVE 308	INTRODUCTION TO AIR POLLUTION CONTROL ¹	
CEVE 401	CHEMISTRY FOR ENVIRONMENTAL ENGINEERING AND SCIENCE	
CEVE 404	ATMOSPHERIC PARTICULATE MATTER ¹	
CEVE 406 / ENST 406	INTRODUCTION TO ENVIRONMENTAL LAW ¹	
CEVE 411	ATMOSPHERIC CHEMISTRY AND CLIMATE	
CEVE 426	SMART MATERIALS FOR THE ENVIRONMENT	
CEVE 434	FATE AND TRANSPORT OF CONTAMINANTS IN THE ENVIRONMENT	
CEVE 444	ENVIRONMENTAL MICROBIOLOGY AND MICROBIAL ECOLOGY	
Or any approved (Area I - Environmental Engineering) course from CEVE course offerings		
<i>Select 2 courses (6 credit hours) from the Area II - Hydrology and Water Resources Area of Specialization</i>		
<i>Select 2 courses (6 credit hours) from the Area III - Structural Engineering and Mechanics Area of Specialization</i>		
<i>Select 2 courses (6 credit hours) from the Area IV - Urban Infrastructure, Reliability and Management Area of Specialization</i>		
Total Credit Hours		30

Area of Specialization: Area II - Hydrology and Water Resources

All students must select a minimum of 2 courses (6 credit hours) from Area II. Students pursuing the Area II - Hydrology and Water Resources area of specialization must complete:

- 4 courses (12 credit hours) from Area II - Hydrology and Water Resources
- 2 courses (6 credit hours) from Area I - Environmental Engineering

Code	Title	Credit Hours	
<i>Select 4 courses from the following:</i>			
CEVE 314 / BIOE 365 / GLHT 314	SUSTAINABLE WATER PURIFICATION FOR THE DEVELOPING WORLD	12	
CEVE 412	HYDROLOGY AND WATER RESOURCES ENGINEERING		
CEVE 420	ENVIRONMENTAL REMEDIATION RESTORATION		
CEVE 421	CLIMATE RISK MANAGEMENT		
CEVE 518	ENVIRONMENTAL HYDROGEOLOGY		
Or any approved (Area II - Hydrology or Water Resources) course from CEVE course offerings			
<i>Select 2 courses (6 credit hours) from the Area I - Environmental Engineering Area of Specialization</i>			
<i>Select 2 courses (6 credit hours) from the Area III - Structural Engineering and Mechanics Area of Specialization</i>			
<i>Select 2 courses (6 credit hours) from the Area IV - Urban Infrastructure, Reliability and Management Area of Specialization</i>			
Total Credit Hours			30

Area of Specialization: Area III - Structural Engineering and Mechanics

All students must select a minimum of 2 courses (6 credit hours) from Area III. Students pursuing the Area III - Structural Engineering and Mechanics area of specialization must complete:

- 4 courses (12 credit hours) from Area III - Structural Engineering and Mechanics
- 2 courses (6 credit hours) from Area I - Environmental Engineering
- 2 courses (6 credit hours) from Area II - Hydrology and Water Resources
- 2 courses (6 credit hours) from Area IV - Urban Infrastructure, Reliability and Management

Code	Title	Credit Hours
<i>Select 4 courses from the following:</i>		
CEVE 325	STRUCTURAL ANALYSIS AND MODELING	12
CEVE 400 / MECH 400	ADVANCED MECHANICS OF MATERIALS	
CEVE 427 / MECH 427	PHYSICS GUIDED MACHINE LEARNING & DATA DRIVEN MODELING FEM	
CEVE 431 & CEVE 432	DESIGN AND BEHAVIOR OF CONCRETE BUILDINGS AND BUILDING ELEMENTS and CONCRETE AND STEEL STRUCTURES LABORATORY	
CEVE 441	DESIGN AND BEHAVIOR OF STRUCTURAL STEEL BUILDINGS AND BUILDING ELEMENTS	
CEVE 476	STRUCTURAL DYNAMIC SYSTEMS ¹	
CEVE 496 / MECH 466	SYSTEM IDENTIFICATION OF DYNAMIC SYSTEMS WITH MACHINE LEARNING	

Or any approved (Area III Structural Engineering and Mechanics) course from CEVE/MECH course offerings	
Select 2 courses (6 credit hours) from the Area I - Environmental Engineering Area of Specialization	6
Select 2 courses (6 credit hours) from the Area II - Hydrology and Water Resources Area of Specialization	6
Select 2 courses (6 credit hours) from the Area IV - Urban Infrastructure, Reliability and Management Area of Specialization	6
Total Credit Hours	30

Area of Specialization: Area IV - Urban Infrastructure, Reliability and Management

All students must select a minimum of 2 courses (6 credit hours) from Area IV. Students pursuing the Area IV - Urban Infrastructure, Reliability and Management area of specialization must complete:

- 4 courses (12 credit hours) from Area IV - Urban Infrastructure, Reliability and Management
- 2 courses (6 credit hours) from Area I - Environmental Engineering
- 2 courses (6 credit hours) from Area II - Hydrology and Water Resources
- 2 courses (6 credit hours) from Area III - Structural Engineering and Mechanics

Code	Title	Credit Hours
Select 4 courses from the following:		
CEVE 301	ENGINEERING ECONOMICS AND PROJECT MANAGEMENT	12
CEVE 313 / STAT 313	UNCERTAINTY AND RISK IN URBAN INFRASTRUCTURES	
CEVE 320 / ENGI 320	ETHICS AND ENGINEERING LEADERSHIP	
CEVE 424	TIME-DEPENDENT SYSTEM RELIABILITY METHODS AND APPLICATIONS ¹	
CEVE 452	URBAN TRANSPORTATION SYSTEMS	
CEVE 460	BRIDGE ENGINEERING AND EXTREME EVENTS ¹	
CEVE 492	MODELING AND ANALYSIS OF NETWORKED SYSTEMS ¹	
Or any approved (Area IV - Urban Infrastructure, Reliability and Management) course from CEVE/CMOR/ECON/MGMT/STAT course offerings		
Select 2 courses (6 credit hours) from the Area I - Environmental Engineering Area of Specialization		6
Select 2 courses (6 credit hours) from the Area II - Hydrology and Water Resources Area of Specialization		6
Select 2 courses (6 credit hours) from the Area III - Structural Engineering and Mechanics Area of Specialization		6
Total Credit Hours		30

Footnotes and Additional Information

¹ Offered alternative years

Suggested Electives for the BSCE Degree

Code	Title	Credit Hours
CEVE 417 / MECH 417	FINITE ELEMENT ANALYSIS	3

CEVE 424	TIME-DEPENDENT SYSTEM RELIABILITY METHODS AND APPLICATIONS	3
CEVE 454 / BIOE 454 / MECH 454	COMPUTATIONAL FLUID MECHANICS	3
CEVE 499	SPECIAL PROBLEMS	1-12
CHEM 211 & CHEM 213	ORGANIC CHEMISTRY I and ORGANIC CHEMISTRY DISCUSSION I	3
CMOR 304	DIFFERENTIAL EQUATIONS IN SCIENCE AND ENGINEERING	3
CMOR 360	INTRODUCTION TO OPERATIONS RESEARCH AND OPTIMIZATION	3
CMOR 422	NUMERICAL ANALYSIS	3
CMOR 441	LINEAR AND INTEGER PROGRAMMING	3
ECON 100	PRINCIPLES OF ECONOMICS	3
ECON 445	MANAGERIAL ECONOMICS	3
MECH 343	MODELING OF DYNAMIC SYSTEMS - LECTURE & LAB	4
MECH 412	VIBRATIONS	3
STAT 385	METHODS OF DATA ANALYSIS AND SYSTEM OPTIMIZATION	4

Policies for the BSCE Degree

Program Restrictions and Exclusions

Students pursuing the BSCE degree should be aware of the following program restrictions:

- As noted in *Majors, Minors, and Certificates* (<https://ga.rice.edu/undergraduate-students/academic-opportunities/majors-minors-certificates/>), under *Declaring Majors, Minors and Certificates*, students may not obtain both a BA and a BS in the same major.
- Students pursuing the Bachelor of Science in Civil Engineering (BSCE) Degree may not additionally pursue the Bachelor of Science in Environmental Engineering (BSEnE) Degree.
- Students pursuing the Bachelor of Science in Civil Engineering (BSCE) Degree may not additionally pursue the BA Degree with a Major in Civil and Environmental Engineering.

Transfer Credit

For Rice University's policy regarding transfer credit, see *Transfer Credit* (<https://ga.rice.edu/undergraduate-students/academic-policies-procedures/transfer-credit/>). Some departments and programs have additional restrictions on transfer credit. The Office of Academic Advising maintains the university's official list of *transfer credit advisors* (<https://oaa.rice.edu/advising-network/transfer-credit-advisors/>) on their website: <https://oaa.rice.edu>. Students are encouraged to meet with their academic program's transfer credit advisor when considering transfer credit possibilities.

Departmental Transfer Credit Guidelines

Students pursuing the BSCE degree should be aware of the following departmental transfer credit guidelines:

- Requests for transfer credit will be considered by the program director (and/or the program's official transfer credit advisor) on an individual case-by-case basis.

Additional Information

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

Opportunities for the BSCE Degree

Academic Honors

The university recognizes academic excellence achieved over an undergraduate's academic history at Rice. For information on university honors, please see [Latin Honors \(https://ga.rice.edu/undergraduate-students/honors-distinctions/university/\)](https://ga.rice.edu/undergraduate-students/honors-distinctions/university/) (*summa cum laude*, *magna cum laude*, and *cum laude*) and [Distinction in Research and Creative Work \(https://ga.rice.edu/undergraduate-students/honors-distinctions/university/\)](https://ga.rice.edu/undergraduate-students/honors-distinctions/university/). Some departments have department-specific Honors awards or designations.

Departmental Honor, Award, and Scholarship Opportunities

- **Distinction in Research and Creative Work:** The Department of Civil and Environmental Engineering will recognize graduating seniors for outstanding creative contributions with the award of [Distinction in Research and Creative Work \(https://ga.rice.edu/undergraduate-students/honors-distinctions/university/\)](https://ga.rice.edu/undergraduate-students/honors-distinctions/university/). The Department recognizes this award as being a significant honor. As such, it will be awarded to no more than 20% of a graduating class (rounded up to next whole number). This award shall be given for significant contributions in research, design, and creative projects beyond class assignments (except CEVE 499). Generally, it is expected that the student recipients will have performed research/design for a minimum of two academic segments (one segment = one academic year or one summer) during their undergraduate career (either for credit or pay). It may be given for one outstanding piece of work for consistent meaningful contributions made over the course of an undergraduate career. All majors (BA and BS) are eligible and will be considered for this distinction in the spring prior to their graduation.
- **Rice Global Forum:** Rice Global Forum (RGF) is an engineering and construction industry funded center which is in its second decade of operation. It was founded by Ahmad Durrani, past chair of Civil and Environmental Engineering at Rice. RGF funds and facilitates interaction with the engineering and construction industry, particularly oil and gas related work. RGF funds \$25,000 worth of scholarships every year. In addition, RGF also consistently sponsors and supports Engineers Without Borders (EWB) and has donated to other student clubs as well in addition to holding an engineering design competition every year in February during National Engineers Week.

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.

Student Organizations and Clubs

- **American Society of Civil Engineers Student (ASCE):** <https://www.asce.org/communities/student-members> (<https://www.asce.org/communities/student-members/>)
ASCE seeks to promote civil and environmental engineering, expose students to real world engineering, and connect students to alumni and professionals. Throughout the year we invite speakers from the industry, visit plants and sites, and organize social events. The objectives of this Chapter are to encourage the development of a professional consciousness, to afford an opportunity for civil engineering students to become acquainted and to practice working together effectively, to promote a spirit of congeniality among them, and to provide friendly contact with the engineering profession. We also support the Concrete Canoe competition (see below) and the Seismic Design Competition of the Earthquake Engineering Research Institute (EERI).
- **Chi Epsilon:** <https://www.chi-epsilon.org/>
Chi Epsilon is dedicated to maintaining and promoting the status of civil engineering as an ideal profession. Chi Epsilon was organized to recognize the characteristics of the individual civil engineering deemed to be fundamental to the successful pursuit of an engineering career, and to aid in the development of those characteristics in the civil engineering student.
- **Engineers Without Borders (EWB):** <https://ewb.rice.edu/>
EWB partners with developing communities worldwide to design engineering solutions that will improve their standards of living. It is an important component of the Civil and Environmental Engineering program. BA students with their flexible curriculum are encouraged to participate. This exciting endeavor allows undergraduates to have an experience in a developing country, where they are able to design and build a project to help society. Students have been attracted to the EWB program in large numbers and our local chapter is one of the most successful in the United States. Some CEVE courses are EWB-related, providing the opportunity to also obtain credit hours.
- **Concrete Canoe:** <https://concretecanoe.rice.edu/>
Rice Concrete Canoe is a student-run club that creates a functional concrete canoe to race and present at the yearly ASCE sponsored

competition. Through the year, members gain engineering experience through the research, planning and constructing of a concrete canoe. By offerings members exposure to the engineering design process, small-group work, software such as Matlab and Adobe Illustrator (and possibly more starting this year), and laser cutters, Concrete Canoe offers a unique experience to students regardless of whether or not they want to become engineers.

- **Society of Women Engineers:** <https://swe.rice.edu/>
The Society of Women Engineers aims to empower women to pursue and achieve their full potential in science and engineering related fields. We provide opportunities in professional development, academic and post-graduate planning, community outreach, and social events.

Additional Information

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