

CEE

Civil and Environmental Engineering

WEB LINKS	https://ceve.rice.edu/undergraduate-program
FRANK ADVICE	Make a 4-year plan early on to know what the major entails and update as you go. Consult with advisers if in doubt. Don't overload your schedule in the first two semesters; try to get the requisites out of the way and aim to take 15-18 credits per semester. Take CEVE 101 in the freshman year to get a broad overview of courses and research in the department. Take CEVE 481 in the fall term and CEVE 480 in the spring of your senior year. Try studying in groups, after your own reviews, to enhance learning and critical discussion skills. Join and actively participate in student and professional organizations.
ADVICE FOR STUDENTS WITH AP CREDIT	With at least a 4 on AP exams, you may not need to take courses such as Physics, Chemistry, Calculus or Biology. If you feel you are ready, you can take higher level courses or honors courses. You can also get started with your master's degree in the last one to two years.
GRADUATION REQUIREMENTS	Students are responsible for making certain that their plan of study meets all degree and major requirements. These requirements are found in the General Announcements. Students have the option of following either their matriculation or graduation year requirements.
BS VERSUS BA	The B.S. program is accredited by the Engineering Accreditation Commission (EAC) of ABET, www.abet.org . The B.S. is recommended for those interested in graduate studies or careers as licensed professional engineers. The B.A. degree is recommended to students interested in graduate studies outside of engineering such as policy, law or medicine, or those interested in pursuing a double major or a minor, such as the one in energy and water sustainability.
NOT REQUIRED BUT HIGHLY RECOMMENDED COURSES	CEVE 304 Structural Analysis, (required for structures and mechanics specialty), CEVE 322 Engineering Economics, CEVE 313 Uncertainty and Risk in Urban Infrastructures, CAD/CAE course (CEE tutorial), and Fondren Library's Introduction to GIS.



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RESEARCH	Students are encouraged to seek undergraduate research experience with CEE faculty members. Explore research opportunities early by talking to professors and expressing interest in their work. CEVE 101 will introduce you to CEE faculty and their research areas.
INTERNSHIPS	Students are encouraged to apply for summer internships. The ASCE student chapter and the Center for Career Development's job fairs are great resources. Internships are not limited to engineering firms, but have more leverage if related to your career focus.
STUDY ABROAD	While challenging, study abroad is possible for engineers. Required Rice courses may not be offered at universities abroad. Plan to travel in the spring of the sophomore year or fall of the junior year. Consider joining Engineers Without Borders and implement engineering projects in developing countries. Travel is typically during scheduled breaks.
PROFESSIONAL ORGANIZATIONS AND STUDENT CLUBS	ASCE (American Society of Civil Engineers) student chapter, EWB (Engineers Without Borders), Chi Epsilon Honor Society, Concrete Canoe Club, Earthquake Engineering Research Institute (EERI), and the Society of Women Engineers, among others.
EXPLORATORY COURSES FOR NON-MAJORS	CEVE 101 Fundamentals of Civil and Environmental Engineering, CEVE 310 Principles of Environmental Engineering, CEVE 307 Energy and the Environment, CEVE 406 Intro Environmental Law, CEVE 313 Uncertainty and Risk in Urban Infrastructures.

B.A. In Civil & Environmental Engineering

(Track E: Environmental Core Curriculum)

Specializations: Courses labeled as SPEC cover topics in which environmental engineering and other disciplines share a common interest. Take 7 courses from electives approved by an adviser assigned by the CEE Dept., including 4 from one specific focus area. Of these 7 electives, 4 must be 300 level courses or above, and 2 of these upper-division courses must be from the CEE curriculum. Examples of areas of specialization include environmental science and engineering, civil engineering, biology, chemical engineering, chemistry, economics or management

Sample Degree Plan

THIS IS ONE EXAMPLE OF MANY POSSIBLE SCHEDULES.

CONSULT A DIVISIONAL OR DEPARTMENTAL ADVISER TO CUSTOMIZE YOUR DEGREE PLAN.

FALL			SPRING		
FRESHMAN 17 credits			FRESHMAN 17 credits		
CHEM 121	General Chemistry I	3	CHEM 122	General Chemistry II	3
CHEM 123	General Chemistry w/ Lab	1	CHEM 124	General Chemistry w/ Lab	1
MATH 101	Single Variable Calculus	3	MATH 102	Single Variable Calculus II	3
	or 105			or 106	
PHYS 101	Mechanics w/ Lab	4	PHYS 102	Electricity and Magnetism w/ Lab	4
PHYS 103	Mechanics Discussion	0	PHYS 104	Electricity and Magnetism Discussion	0
CEVE 101	Fundamentals of CEE	3	CEVE 302	Sustainable Design	3
FWIS	First Year Writing Intensive Seminar	3	OPEN	Open elective	3
SOPHOMORE 15 credits			SOPHOMORE 16 credits		
CEVE 310	Principles of Environmental Engineering	3	CEVE 412	Hydrology and Water Resources Engr	3
CAAM 210	Intro to Eng Computation	3	CEVE 320	Ethics & Engr Leadership	3
DIST	Distribution elective	3	CEVE 323	Advanced Sustainable Design	3
DIST	Distribution elective	3	CEVE 452	Urban Transportation Systems	3
OPEN	Open elective	3	LPAP	Lifetime Physical Activity Program	1
			DIST	Distribution Elective	3
JUNIOR 15 credits			JUNIOR 16 credits		
BIOC 201	Introductory Biology	3	CEVE 307	Energy and the Environment	3
DIST	Distribution Elective	3	CEVE 401	Environmental Chemistry	4
OPEN	Open elective	3	DIST	Distribution elective	3
OPEN	Open elective	3	DIST	Distribution elective	3
OPEN	Open elective	3	OPEN	Open elective	3
SENIOR 15 credits			SENIOR 12 credits		
BIOC 301	Biochemistry I	3	BIOC 380	Neurosystems	3
OPEN	Open elective	3	OPEN	Open Elective	3
OPEN	Open elective	3	OPEN	Open Elective	3
OPEN	Open elective	3	OPEN	Open Elective	3
OPEN	Open elective	3			

Basic requirements	General math & science courses Core courses in major	25 16
Elective requirements	Specialization area courses Open electives FWIS and LPAP Distribution courses	21 42 18*
Minimum credit required for the B.A.		122

Of the 122 credits, the B.A. in Civil and Environmental Engineering requires a minimum of 62 credits in general math and science, core and specialization area courses.

*Our B.A. required Math & Science includes (3) Distribution III courses, so only 18 additional hours are needed.

Major Requirements

NUMBER	CREDIT	TITLE
CAAM 210 or 335 or COMP 110/NSCI 230	3	Introduction to Engineering Computation/Matrix Analysis/ Computation in Science and Engineering/ Computation in Science and Engineering
CHEM 121/123	4*	General Chemistry I w/Lab
CHEM 122/123	4*	General Chemistry II w/Lab
MATH 101/105	3	Single Variable Calculus I / AP or other credit in Calculus I
MATH 102/106	3	Single Variable Calculus II /AP or other credit in Calculus II
PHYS 101/103 or	4	Mechanics w/Lab
PHYS 102/104	4*	Electricity and Magnetism w/Lab
CEVE 101	3	Fundamentals of Civil & Environmental Engineering
CEVE 307	3	Energy and the Environment
CEVE 310	3	Principles of Environmental Engineering
CEVE 401	4*	Environmental Chemistry and Lab
CEVE 412	3	Hydrology and Water Resources Engineering
SPEC	3	Specialization elective
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B.A. In Civil & Environmental Engineering

(Track C: Civil Core Curriculum)

Specializations: The SPEC courses cover general civil engineering topics. Take 7 courses from electives approved by an adviser assigned by the CEE Dept., including at least 4 with the CEVE designation. Of these 7 electives, 4 must be 300 level courses or above.

Sample Degree Plan

THIS IS ONE EXAMPLE OF MANY POSSIBLE SCHEDULES.

CONSULT A DIVISIONAL OR DEPARTMENTAL ADVISER TO CUSTOMIZE YOUR DEGREE PLAN.

FALL				SPRING			
FRESHMAN		18 credits		FRESHMAN		17 credits	
CHEM 121	General Chemistry I	3		CHEM 122	General Chemistry II	3	
CHEM 123	General Chemistry I Lab	1		CHEM 124	General Chemistry II Lab	1	
MATH 101	Single Variable Calculus I	3		MATH 102	Single Variable Calculus II	3	
	or 105				or 106		
PHYS 101	Mechanical w/ Lab	4		PHYS 102	Electricity and Magnetism w/ Lab	4	
PHYS 103	Mechanics Discussion			PHYS 104	Electricity and Magnetism Discussion	0	
CEVE 101	Fund. of Civil & Envir Engr	3		OPEN	Open elective	3	
FWIS	First-Year Writing Intensive Seminar	3		OPEN	Open elective	3	
LPAP	Lifetime Physical Activity Program	1					
SOPHOMORE		12 credits		SOPHOMORE		15 credits	
CAAM 210	Intro to Engr Computation	3		CEVE 320	Ethics & Engrng Leadership	3	
DIST	Distribution elective	3		CEVE 452	Urban Transportation Systems	3	
DIST	Distribution elective	3		DIST	Distribution elective	3	
OPEN	Open elective	3		OPEN	Open elective	3	
				OPEN	Open elective	3	
JUNIOR		15 credits		JUNIOR		16 credits	
CEVE 310	Principles of Environmental Engr	3		CEVE 401	Environmental Chemistry	4	
OPEN	Open elective	3		CEVE 420	Envi Remedial Restoration	3	
OPEN	Open elective	3		DIST	Distribution elective	3	
OPEN	Open elective	3		DIST	Distribution elective	3	
OPEN	Open elective	3		OPEN	Open elective	3	
SENIOR		15 credits		SENIOR		15 credits	
CEVE 302	Sustainable Design	3		CEVE 307	Energy and the Environment	3	
ENST 310	Case Studies in Sustain Design	3		CEVE 412	Hydrology & Water Resources Engr	3	
OPEN	Open elective	3		ENST 322	Case Studies in Sustainability	3	
OPEN	Open elective	3		CEVE 499	Special Topics	3	
OPEN	Open elective	3		DIST	Distribution elective	3	

BASIC REQUIREMENTS	General math & science courses	25
	Core Courses in Major	16
ELECTIVE REQUIREMENTS	Specialization area courses	21
	Open electives, FWIS and LPAP	42
	Distribution courses	18*
Minimum credit required for the B.A.		122

Of the 122 credits, the B.A. in Civil and Environmental Engineering requires a minimum of 62 credits in general math and science, core, and specialization area courses.

*Our B.A. required Math & Science includes (3) Distribution III courses, so only 18 additional hours are needed.

Major Requirements

NUMBER	CREDIT	TITLE
CAAM 210 or 335 or COMP 110/NSCI 230	3	Introduction to Engineering Computation/Matrix Analysis/ Computation in Science and Engineering/ Computation in Science and Engineering
CHEM 121	4	General Chemistry I w/Lab
CHEM 122	4	General Chemistry II w/Lab
MATH 101/105	3	Single Variable Calculus I /AP or other credit in Calculus I
MATH 102/106	3	Single Variable Calculus II /AP or other credit in Calculus II
PHYS 101/111	4	Mechanics w/Lab /Honors Mechanics w/Lab
PHYS 102/112	4	Electricity and Magnetism w/Lab /Honors Electricity and Magnetism w/Lab
CEVE 101	3	Fundamentals of Civil and Environmental Engineering
CEVE 211	4	Engineering Mechanics
CEVE 304	4	Structural Analysis
CEVE 310	3	Principles of Environmental Engineering
CEVE 311	3	Mechanics of Solids and Structures
CEVE 312	3	Strength of Materials Lab
SPEC	3	Specialization Elective
SPEC	3	Specialization Elective
SPEC	1	Specialization Elective
SPEC	3	Specialization Elective
SPEC	3	Specialization Elective
SPEC	3	Specialization Elective
SPEC	3	Specialization Elective