

CIVIL ENGINEERING, BS

Civil engineering students are interested in how buildings are designed, how they are built, and how they stand up against the forces of nature. They are concerned about the environment and how to provide clean water and improve air quality. They want to be part of the solution for traffic congestion and improve how to move people and goods locally, nationally, and globally. They want to better protect people, their belongings, their homes and businesses from natural disasters and help to create a sustainable and resilient future through creative and technical solutions.

Program Educational Objectives

The educational objectives of the University of Alabama's Bachelor of Science in Civil Engineering (BSCivE), program is to have graduates who, within a few years of graduation, are in demand and lead fulfilling professional careers, in their chosen area of professional practice, through their demonstrated abilities to:

1. Apply foundational knowledge of mathematics, science, humanities, and social sciences; and
2. Synthesize technical knowledge of engineering analysis and design to identify, formulate, and solve problems; and
3. Employ their professional practice skills.

Student Outcomes

Students, upon completion of the BSCivE, program, will be able to:

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 met 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 judgements, 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 judgement to draw conclusions.
7. An ability to require and apply new knowledge as needed, using appropriate learning strategies.

All students are strongly encouraged to prepare for and pass the Fundamentals of Engineering (FE) examination prior to graduation.

Civil Engineering Curriculum

Freshman

Fall	Hours	Spring	Hours
CE 121 or ENGR 111	1	ENGR 171	1
ENGR 103 or 123	3	MATH 126 or 146	4
MATH 125 or 145	4	PH 105 or 125	4
EN 101	3	EN 102	3

CH 100, 101, or 117	4	History (HI) or social and behavioral sciences (SB) elective ^{1,4}	3
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Sophomore

Fall	Hours	Spring	Hours
CE 260	2	CE 262	3
AEM 201	3	AEM 250	3
MATH 227 or 247	4	AEM 264	3
Approved natural science (N) elective ²	4	MATH 238	3
GES 255	3	PH 106, 126, CH 102, or CH 118	4

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Junior

Fall	Hours	Spring	Hours
CE 331	3	CE 320	3
CE 340	4	CE 366	3
CE 350	3	CE 378	3
AEM 311	3	ECE 320, ME 215, or ME 216	3
History (HI) or social and behavioral sciences (SB) elective ^{1,4}	3	History (HI) or social and behavioral sciences (SB) elective ^{1,4}	3

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Senior

Fall	Hours	Spring	Hours
Senior (plan of study) electives ³	9	CE 401 or 403	4
COM 123 or 124	3	Senior (plan of study) electives ³	9
Humanities (HU), literature (L), or fine arts (FA) elective ^{1,4}	3	Humanities (HU), literature (L), or fine arts (FA) elective ^{1,4}	3

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Total Hours: 124

Footnotes

¹ Students are encouraged to consider EC 110 Principles of Microeconomics as an SB, CE 220 Society Infrastruct & Environm as an SB, and/or a foreign language as an HU.

² Approved natural science (N) electives include:
 BSC 114 Principles Of Biology I and BSC 115 Laboratory Biology I or BSC 118 Honors General Biology I
 GEO 101 The Dynamic Earth
 GEO 102 The Earth Through Time
 GEO 104 Hazardous Earth
 GEO 105 Sustainable Earth
 GY 101 Atmospheric Proc & Patterns
 GY 102 Earth Surface Processes
 GY 207 Field Water and Climate

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³ Senior (plan of study) electives must be CE courses numbered 400 or above or other approved electives. Other courses may be approved by petition. At least six hours of the senior electives must be design-designated (D) courses. In addition, not more than two senior electives may be professional practice (P) courses, including any non-civil engineering courses. See the department list for a list of approved senior design electives, including approved design-designated (D), professional practice (P), and general technical (G) electives.

⁴ The College of Engineering core curriculum requires a minimum of nine hours of HU, L, or FA courses and nine hours of HI or SB courses.

Students must satisfy the College of Engineering in-depth requirement (minimum of six hours in one core designation (HU, L, FA, HI or SB) in the same discipline (subject)).

[Click here for a list of UA Core Courses.](#)

The College of Engineering requires a grade of "C-" or better be earned in all courses that are a pre-requisite to classes used to fulfill degree requirements. If a grade lower than "C-" is received in a course that is a pre-requisite, that course must be repeated and a grade of "C-" or higher must be earned before enrolling in the subsequent course.

Related department policies and updates of catalog information are posted on the department website.

Civil engineering provides a broad spectrum of career opportunities including water resources engineer, structural engineer, transportation engineer, environmental engineer, geotechnical engineer, construction engineer, site or urban planning engineer and architectural engineer. In addition, civil engineering graduates can use their technical knowledge and skills for entry into other professions such as medicine or law.

Types of Jobs Accepted

Graduates are design engineers and field engineers. They work in engineering sales and technical support. From small local firms to large multi-national firms, from specialty consulting to full-service design-build, from industry to government to public service, graduates accept offers from many different types of employers. Many get graduate degrees in civil or environmental engineering or go on to medical or law school.

Jobs of Experienced Alumni

Civil engineers often become community leaders. Understanding the built environment and how to make cities and structures more energy efficient, environmentally friendly and sustainable, alumni are well positioned to lead society in resolving many of the issues important to the future. Graduates often own design firms, move into corporate management, become civic leaders through state and federal public service, become research and development engineers and are entrepreneurs in business development.

Learn more about opportunities in this field at the Career Center