

Civil Engineering (BS)

Degree Requirements

First Year		Credit Hours
Fall		16
MA 125	4 hrs	
CH 131	4 hrs	
EG 101	2 hrs	
EH 101	3 hrs	
Gen Ed*	3 hrs	
Spring		17
MA 126	4 hrs	
CH 132	4 hrs	
EH 102	3 hrs	
CE 102	2 hrs	
PH 201	4 hrs	
Second Year		Credit Hours
Fall		17
MA 227	4 hrs	
Sci Elective**	4 hrs	
CE 204	2 hrs	
CE 205	1 hrs	
EG 283	3 hrs	
Gen Ed*	3 hrs	
Spring		18
MA 238	3 hrs	
ST 315	3 hrs	
EG 284	3 hrs	
EG 315	3 hrs	
Gen Ed*	3 hrs	
Gen Ed*	3 hrs	

Third Year		Credit Hours
Fall		17
CE 314	3 hrs	
CE 315	1 hrs	
CE 352	3 hrs	
CE 384	3 hrs	
CE 385	1 hrs	
EG 231	3 hrs	
EG 360	3 hrs	
Spring		17
CE 340	3 hrs	
CE 341	1 hrs	
CE 353*****	3 hrs	
CE 360	2 hrs	
CE 367	1 hrs	
CE 370	3 hrs	
CE 374	1 hrs	
Gen Ed*	3 hrs	
Fourth Year		Credit Hours
Fall		16
CE 431	2 hrs	
CE 440*****	3 hrs	
CE 470*****	3 hrs	
CE 471	1 hrs	
Str Design***	3 hrs	
Str Dsn Lab***	1 hrs	
CE 460*****	3 hrs	
Spring		13
CE 432	4 hrs	
Tech Elect****	3 hrs	
Tech Elect****	3 hrs	
Gen Ed*	3 hrs	

*Students must complete eighteen credit hours of courses in Humanities and Fine Arts and History, Social and Behavioral Sciences that satisfy both college and university General Education requirements. CA 110, Public Speaking is required for all Civil Engineering students.

**BLY 121, GY 111, or GEO 102

***Either CE 480 and CE 481 (Steel Design) or CE 485 and CE 486 (Concrete Design)

****Two Technical Electives from an approved list. A second structural design course may be taken to satisfy a technical elective requirement.

*****Students must complete all 5 terminal subdiscipline courses (CE 353, 440, 460, 470, and structural design) with a "C" grade or better.

It is important that students make adequate progress in the Civil Engineering program. Satisfactory completion of a set of fundamental courses is required before a student is allowed to take advanced courses. Professional Component Standing (PCS) is awarded by the chair of the department when the student completes the College of Engineering PCS requirements and the CCEE departmental PCS requirements.

College of Engineering PCS Courses			
Course Number	Course Title	Credit Hours	Minimum Grade
EH 101	English Composition I	3	C
EH 102	English Composition II	3	C
CH 131	General Chemistry I + Lab	4	C
MA 125	Calculus I	4	C
MA 126	Calculus II	4	C
PH 201	Calculus-Based Physics I + Lab	4	C

Civil, Coastal, and Environmental Engineering PCS Courses			
Course Number	Course Title	Credit Hours	Minimum Grade
CH 132	General Chemistry II + Lab	4	C
MA 227	Calculus III	3	C
EG 283	Statics	3	C
CE 102	Intro to Civil Engineering	2	C
CE 204/205	Surveying Fundamentals + Lab	3	C
Science Elective	Biology, Geology, or Land Processes	4	C

Students who fail to maintain at least a 2.00 GPA overall at the University of South Alabama may be required to take or repeat appropriate courses as specified by the department chair to correct their deficiencies and may not be permitted to continue in 300- and 400-level engineering courses.

Major Milestones

CIVIL ENGINEERING SAMPLE 4-YEAR PLAN WITH MILESTONES

Term 1	Course Description	Pre-req	Cr Hrs	Milestone Notes
EH 101*	English Composition I		3	Must complete at least 12 hours with a 2.0 or higher GPA

MA 125	Calculus I	ACT Math 27	4	
CH 131/131L	General Chemistry I	ACT Math 24	4	
EG 101	Freshman Seminar	ACT Math 24	2	
Fine Arts Elective			3	
			16	

Term 2	Course Description	Pre-req	Cr Hrs	Milestone Notes
EH 102	English Composition II	EH 101 or test score	3	MA 125
MA 126	Calculus II	MA 125	4	CH 131/131L
CH 132/132L	General Chemistry II	CH 131	4	EH 101 or EH 105*
PH 201/201L	Physics I	MA 125 and MA 126 (cc)	4	
CE 102	Intro to Civil Engineering	ACT Math 24+ or MA 112	2	
			17	

Term 3	Course Description	Pre-req	Cr Hrs	Milestone Notes
MA 227	Calculus III	MA 227 (cc)	4	PH 201/201L
CE 204	Surveying Fundamentals	CE 102 and MA 113	2	MA 126
CE 205	Surveying Fundamentals Lab	CE 102 and MA 113	1	CH 132/132L
EG 283	Statics	MA 126 and PH 201	3	
Science Elective	See advisor for approved course list		4	
History (US or Western Civ.)			3	
			17	

Term 4	Course Description	Pre-req	Cr Hrs	Milestone Notes
MA 238	Differential Equations	MA 227 (cc)	3	MA 227
EG 284	Dynamics	EG 283	3	EG 283
EG 315	Mechanics of Materials	EG 283 and MA 227	3	EH 102
ST 315	Apps Prob and Statistics	MA 125	3	Science Elective
CA 110			3	CE 204

English Literature			3	CE 205
			18	
Term 5	Course Description	Pre-req	Cr Hrs	Milestone Notes
CE 314	Civil Engineering Materials	EG 315 and CE 315 (cc)	3	
CE 315	Civil Engineering Materials Lab	EG 315 and CE 314 (cc)	1	
CE 384	Structural Analysis	EG 315	3	
CE 385	Structural Analysis Lab	EG 315	1	
EG 231	Engineering Economics and Ethics	EG 283	3	
EG 360	Fluid Mechanics	MA 238 and EG 284	3	
EH 372	Technical Writing	EH 102	3	
			17	
Term 6	Course Description	Pre-req	Cr Hrs	Milestone Notes
CE 340	Soil Mechanics	EG 315, EG 360, and CE 341 (cc)	3	Apply for graduation
CE 341 (W)	Geotechnical Lab	CE 340 (cc)	1	
CE 352	Transportation Engineering	CE 204 and CE 205	3	
CE 360	Water Resources Engineering I	EG 360 and CE 205	2	
CE 367 (W)	Hydraulics Lab	EG 360 and CE 360 (cc)	1	
CE 370	Intro to Environmental Engineering	CH 132 and MA 238	3	
CE 374	Environmental Engineering Lab	CH 132 and MA 238		
Social/ Behavioral Elective			3	
			17	
Term 7	Course Description	Pre-req	Cr Hrs	Milestone Notes
CE 431	Senior Design List		2	
CE 443	Geotechnical Engineering	CE 340	3	
CE 460	Water Resources Engineering II	CE 360	3	

CE 470	Water/Wastewater	CE 360, CE 370, and CE 374	3	
CE 471	Water/Wastewater Lab	CE 360, CE 370, and CE 374	1	
Structural Design Elective	See advisor for approved course list		4	
			16	

Term 8	Course Description	Pre-req	Cr Hrs	Milestone Notes
CE 432	Senior Design II		4	
Technical Elective	See advisor for approved course list		3	
Technical Elective	See advisor for approved course list		3	
Social/Behavioral Elective			3	
			13	
**TOTAL			131	

All bolded courses meet general education requirements.

Courses listed as Milestones are required to obtain the Professional Component Standing (PCS).

Prerequisite courses denoted (cc) may be taken concurrently.

*Students who earn an English ACT score of 27, or a written SAT score of 610, can opt out of EH 101.

****Students not Term 1 - Calculus I ready will exceed the 131 hours required for this degree. If math is not started prior to Fall -Year 1, you are likely extending your four-year graduation time table. Students with ACT Math scores 21 and below should begin math courses in the summer before Fall - Year 1.**

Two designated writing (W) courses are required with at least one course chosen from offerings in the student's major or minor. Courses carrying this required credit are identified in the University Bulletin by a (W) after the course title.

The Sample 4-year plan is designed as a guide for students preparing for their course selections. This information provides only a suggested schedule. Actual course selections should be made in consultation with an advisor.

Department Information

Department of Civil, Coastal, and Environmental Engineering Staff

(251) 460-6174

Chair

Kevin D. White

Professors	White, Webb
Associate Professors	Omar, Islam, Steward, Cleary, Kang
Assistant Professors	Macdonald, Pandit, Smallegan, Wu

Department of Civil, Coastal, and Environmental Engineering website
<https://www.southalabama.edu/colleges/engineering/ce/index.html>

Civil Engineering involves the design and construction of systems necessary for our modern society to function. It encompasses many technical specialties whose focus is the design of large, normally one-of-a-kind, facilities such as bridges, buildings, tunnels, highways, dams, waterways, airports, flood control systems, coastal protection systems, water supply networks, and waste treatment plants. As our society expands, challenging opportunities will continue to be available for Civil Engineers practicing in their own private firms, in large companies, or in governmental agencies.

BSCE Program Educational Objectives:

The educational objectives of the Civil Engineering undergraduate program are that, within a few years of program completion, graduates will have used the knowledge and skills gain through academic preparation and post-graduation experience so they have:

1. Advanced in the civil engineering profession, obtained professional licensure, and applied engineering knowledge and problem-solving skills to multi-disciplinary projects.
2. Incorporated economic, environmental, social, regulatory, constructability, and sustainability considerations into the practice of civil engineering.
3. Exhibited effective communication, teamwork, leadership, initiative, project management, and professional and ethical behavior as complements to technical competence.
4. Continued their technical and professional development, which may include graduate level education, continuing education, and participation in professional organizations.

BSCE Student Outcomes:

By the time of graduation from the BSCE Program, students should attain the following outcomes:

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

The Bachelor of Science in Civil Engineering program is accredited by the Engineering Accreditation Commission of ABET, <http://www.abet.org>.

The curriculum builds on a strong base in mathematics, physical sciences, engineering sciences, and humanities developed primarily during the freshman and sophomore years. During the junior year, students develop an understanding of the fundamentals of each area of Civil Engineering. The specialty areas include:

- Environmental Engineering
- Geotechnical Engineering
- Structural Engineering
- Transportation Engineering
- Water Resources/Coastal Engineering

The senior year focuses on design, construction practices, and the integration of more advanced knowledge in civil engineering. A comprehensive project with students participating in a design team prepares them to enter professional practice.

Satisfactory completion of the program outlined below leads to a Bachelor of Science in Civil Engineering. Students must also comply with the College of Engineering Requirements for a Degree which is covered in this Bulletin under College of Engineering.

Exceptional and motivated BSCE students (seniors) have the opportunity to earn a bachelor's and master's degree at an accelerated pace via an accelerated Bachelor's to Masters Process. Students should see their Department Advisor for details.