Civil Engineering - Coastal Engineering Certificate

Degree Requirements

The Department offers Graduate Certificates in three focus areas: Coastal Engineering, Structural Engineering, and Water/ Wastewater Engineering. Each Certificate requires the completion of 12 credit hours (four classes) in one of the three focus areas. Upon completion, a Graduate Certificate is awarded; however, all earned credits are full graduate credits and can either be applied toward a MSCE degree at USA, or transferred to other institutions. For acceptance, graduate certificate applicants should have a civil engineering Bachelor's degree (or closely related equivalent) and appropriate course prerequisites. The program requires satisfactory completion of 12 credit hours with a minimum GPA of 3.0 to be awarded the Certificate.

Civil Engineering Certificate Program Requirements

Course	Course Title	Credit Hours
CE 503	Introduction to Coastal Engineering	3 hrs
CE 566	Coastal and Harbor Engineering	3 hrs
CE XXX (see list below)		3 hrs
CE XXX (see list below)		3 hrs
	List: CE 560 Coastal Hydrodynamics, CE 561 Littoral Processes, CE 563 Numerical Modeling of Coastal Hydrodynamics, CE 590 Special Topics: Coastal Hazards (or Nature Based Solutions)	
	Total Hours	12 hrs

Department Information

Department of Civil, Coastal, and Environmental Engineering Staff	(251) 460-6174
Interim Chair	John Cleary
Professors	Webb
Associate Professors	Islam, Steward, Cleary, Kang
Assistant Professors	Macdonald, Patch, Smyl, Venkiteshwaran, 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, https://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 in this Bulletin leads to a degree of Bachelor of Science in Civil Engineering. Students must also comply with the College of Engineering Requirements for a Degree which are covered in this Bulletin under College of Engineering.

BSCE Accelerated Bachelor's To Master's (ABM) Degree Option

The Department of Civil, Coastal, & Environmental Engineering allows well-qualified undergraduates in the program to follow an “Accelerated Bachelor’s to Master’s” study plan. This plan permits up to six credit hours of graduate coursework to count towards both the Bachelor’s (as Technical Electives) and the Master’s degrees, so that the Master’s degree is earned faster than usual. (The coursework concerned must individually satisfy the requirements of both degrees.) See a departmental advisor for specific details.