B.S.C.E. in Civil Engineering

**Overview**

**Degree Requirements**

**Description**

The B.S.C.E. degree emphasizes engineering sciences and civil engineering design with four proficiency areas: structural engineering, water resources and environmental engineering, transportation and construction management, and geotechnical engineering. The curriculum prepares the student for both professional practice and graduate study.

**Minimum Total Credit Hours: 129**

**Goals/Mission Statement**

**Mission**

The Department of Civil Engineering (CE) within the School of Engineering (SoE) at the University of Mississippi (UM) strives to continuously improve the quality of its three functions: teaching, research and service. In so doing, the Department shall:

- prepare students with a broad based education for entering the civil and other related engineering professions, for advanced studies, and for careers in research;
- provide a top quality research program and graduate education in selected areas of science and engineering technology with its impact extending to regional, national, and global communities; and
- provide service to citizens, industry, and government via technological and educational innovations.

**Goals**

- Improve and maintain effective state-of-the-art graduate and undergraduate programs
- Perform quality research in line with national trends and achieve national recognition in selected areas
- Become a locally and nationally visible department through professional service
- Build stronger ties with civil engineering alumni

**Program Educational Objectives**

BSCE Graduates of the Civil Engineering Program at the University of Mississippi will:

- Practice in civil engineering, environmental engineering or a related area to serve society.
- Pursue professional development including advanced degrees, professional registration and/or certification as appropriate for their qualifications and careers.
- Assume leadership roles in their profession and/or communities.

**Student Outcomes**

In accordance with ABET accreditation requirements, BSCE students at the University of Mississippi should demonstrate the attainment of the following student outcomes:

- (a) an ability to apply knowledge of mathematics, science, and engineering
- (b) an ability to design and conduct experiments, as well as to analyze and interpret data
- (c) an ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability
- (d) an ability to function on multidisciplinary teams
- (e) an ability to identify, formulate, and solve engineering problems
- (f) an understanding of professional and ethical responsibility
- (g) an ability to communicate effectively
- (h) the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context
- (i) a recognition of the need for, and an ability to engage in life-long learning
- (j) a knowledge of contemporary issues
- (k) an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice

**General Education Requirements**

In addition to the courses specified by the School of Engineering general education requirements, the following are required: Math 263-264 and Math 353; laboratory science to be fulfilled by Chem 105, 115 and Phys 211, 212, 221, 222.

Students must also complete at least 18 semester hours of general education requirements: 3 hours must be in speech or oral communication (Spch 102 or 105), 3 hours in humanities, 6 hours in social science (including Econ 310), and 3 hours in fine arts. The remaining 3 hours can be in any of the humanities/fine arts categories. Course categories acceptable for these 18 hours of credit are specified under the general education requirements for the School of Engineering.

**Course Requirements**

Specific requirements for the B.S.C.E. include Csci 251, Engr 207, 309, 312, 323, 400; C E 101, 102, 205, 207, 305, 311, 315, 325 (or M E 325), 401, 405, 412, 413, 417, 431, 433, 455, 456, 471, 472, and 481; 3 hours of basic science elective; at least 6 hours from List A technical electives (C E 414, 435, 495, 514, 572); and no more than 6 additional hours from List B technical electives (Category B.I: any course from List A; Category B.II: C E 511, 521, 531, 570, 581, 585, 590, Engr 321, 360, 497, 555, 571, 573, 591, 593, G E 440, 450; other courses with the approval of the student's adviser and department chair including any relevant independent study course, e.g., Hon 401, C Op 301, 302, C E 497, Engr 596, 597, 598; Category B.III: No more than one course from the approved list of the business minor, e.g., Accy 201, Accy 202, Econ 202, Econ 203, GB 350, or GB 370.)

**Other Academic Requirements**

Students in the Department of Civil Engineering are encouraged to take the Fundamentals of Engineering examination prior to awarding of the baccalaureate degree.