B.S.C.E. in Civil Engineering

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. Three hours of the course work must be in economics (Econ 202 or 203 or 310), 3 hours must be in speech or oral communication (Spch 102 or 105), 3 hours in humanities, 3 hours in social science, 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 Math 261-264; Math 353; Writ 100, Writ 101, Writ 102, or Liba 102; Chem 105, 115, and Phys 211, 212, 221, 222; Csci 251, Engr 207, 309, 312, 321, 310 or 453, 323, 360, 400; C E 101, 102, 205, 207, 305, 405, 311, 315, 401, 412, 417, 431, 433, 455, 456, 471, 472, and 481; 3 hours of basic science elective; 3 hours of one of the required Professional Practice Focus Area courses (CE 325, CE 413, CE 414, CE 435, CE 570, CE 585, CE 581, CE 590, Engr 555, Engr 571, Engr 573, and G E 450); and 6 additional hours of recommended Profession Practice Focus Area courses from a recommended list including CE 413, CE 414, CE 421, CE 435, CE 495, CE 497, CE 511, CE 521, CE 531, CE 570, CE 581, CE 585, CE 590, Engr 555, Engr 571, Engr 573, Engr 590, Engr 596, Engr 597, GE 440, GE 450, GE 470, Mgmt 371, C OP 402, Hon 401 or selected in consultation with the student's department chair and adviser.

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.