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, within 3-5 years after graduation, will:

- Practice in civil engineering, environmental engineering or a related area to serve society.
- Continue to develop professionally by obtaining 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:

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.

General Education Requirements

For detailed information see the the General Education Requirements of the School of Engineering.

Students must complete at least 15 credit hours of general education requirements: 6 credit hours in humanities, 6 credit hours in social science (including Econ 310), and 3 credit hours in fine arts.

Course Requirements

Specific course requirements for the B.S.C.E. include:

- Writ 101, Writ 102;
- Math 261, Math 262, Math 263, Math 264, Math 353;
- Chem 105, Chem 115;
- Phys 211, Phys 212, Phys 221, Phys 222;
- Csci 251 or 256;
- Econ 310;
- C E 103, C E 206, C E 208, C E 301, C E 302, C E 303, C E 311, C E 315, C E 371, C E 402, C E 412, C E 413, C E 417, C E 431, C E 433, C E 454, C E 456, C E 472, C E 481;
- Engr 101, Engr 111, Engr 309, Engr 310, Engr 312, Engr 323;

- 3 credit hours of basic science elective: Geol 101 or Geol 102 or Geol 103 or Geol 104 or Geol 105 or Bisc 102 or Bisc 104 or Bisc 160/161;
- At least 9 credit hours of C E technical electives from this list: C E 414, C E 435, C E 495, C E 500, C E 511, C E 514, C E 521, C E 531, C E 535, C E 572, C E 574, C E 575, C E 578, C E 581, C E 585, C E 5XX – Sustainability, Engr 541, Engr 547, Engr 573, or others upon approval by the department chair;
- No more than 6 credit hours from this list: Engr 321, Engr 360, Engr 590, Engr 591, Engr 593, Engr 597, G E 440, G E 450, G E 510, Ch E 535 or others upon approval by the department chair;
- No more than one course from an approved minor such as business, ROTC, NROTC, math, environmental studies, CME may be used for the Engr 3XX and above technical electives *Other courses may be used to fulfill the category Engr #XX and above with the approval of the department chair including independent study course (Example: Hon 401, C OP 301, C OP 302, C E 497, Engr 596, Engr 597 & Engr 598)

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.

Specializations

- Emphasis - Environmental
- Emphasis - Standard