

B.S.E.E. in Electrical Engineering

[Overview](#)

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Description

The B.S. in electrical engineering provides broad training in the basic and engineering sciences. The curriculum provides thorough knowledge of the field of electrical engineering, supplemented by fundamentals of civil, mechanical, and chemical engineering. This program may be completed with an emphasis in computer engineering, RF/wireless engineering, or telecommunications.

Minimum Total Credit Hours: 128

Goals/Mission Statement

Program Goals - The program educational goals of the Department of Electrical Engineering undergraduate programs at The University of Mississippi are

1. To educate students in the fundamental practices and concepts of electrical engineering with an engineering science emphasis in a way that enables students to apply basic knowledge to achieve technological advances toward the satisfaction of human needs,
2. To support professional, industrial, and economic development by providing students with opportunities for an intensive learning experience and direct application of knowledge in the field of electrical engineering, and
3. To prepare students for continued professional education, including graduate study.

These goals are consistent with The University of Mississippi mission statement and the vision statements of The University of Mississippi strategic plan, Ole Miss through 2010: A Guide for the Journey, which focuses resources in the areas of instruction, research, and service.

Program Philosophy - The electrical engineering undergraduate program is founded on basic sciences, mathematics, and engineering science fundamentals. The program emphasizes engineering science and focuses on the application of scientific knowledge to the solution of engineering problems. This focus is intended to lead students to develop analysis and design skills, and original thought processes that will serve them throughout their careers in a rapidly changing world.

The electrical engineering program is based on the philosophy that specialization is better acquired at the graduate level. The program is a broad-based program with an emphasis on the fundamentals of electrical engineering. The curriculum consists of engineering background courses in science and mathematics; courses in the humanities, social sciences, and fine arts that foster an appreciation of the interrelationship of basic sciences, technological advances, and society; and major multi-course sequences in engineering. Multi-course sequence areas are

1. Core topics common to all areas of engineering,
2. Circuits and electronics,
3. Analog systems,
4. Digital systems,
5. Electromagnetic fields, RF and microwaves, and
6. Engineering design.

The basic program in electrical engineering requires multiple courses in each of the above areas. The emphasis areas of computer engineering, RF and wireless engineering, and telecommunications permit additional concentration in one of the areas and require multiple courses in at least five of the above areas.

Program Objectives - Based on our philosophy and goals, the faculty of the Department of Electrical Engineering has adopted the following undergraduate program educational objectives. Graduates of the B.S.E.E. undergraduate program at The University of Mississippi should

1. Have a sound understanding of the fundamentals of engineering science, computer applications, mathematics, and physics; and have the ability to apply this knowledge in engineering practice.
2. Be able to draw from physics, computer science, mathematics, and engineering science to identify, formulate, and develop practical design solutions to open-ended electrical engineering problems.
3. Have experience in using different computers and operating systems for scientific computation, graphics, word processing, data acquisition, process control, computer-aided design, and engineering communication.
4. Be able to communicate effectively with adequate written and oral technical communication skills.
5. Have laboratory experiences in chemistry, physics, engineering science, and electrical engineering that include a focus on health and safety issues. These experiences will include the design of experiments, computer-aided data acquisition, process control, and analysis and interpretation of data.
6. Have a general education of sufficient breadth to enhance their ability to work and deal with an ever-changing society involving people of different backgrounds and disciplines.
7. Have an understanding of professional and ethical responsibility.
8. Have an appreciation of the need for lifelong learning.

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. The required 18 hours of humanities/behaviors and social science/fine arts are as specified by the School of Engineering general education requirements but must include Econ 310.

Course Requirements

The following are the requirements for the B.S.E.E. without an emphasis. A student can also complete the degree with an emphasis in either RF/wireless, telecommunications, or computer engineering. The full requirements for these emphases are given separately.

Specific requirements for the B.S.E.E. include CSci 251, 259; Engr 309, 321, 360, 361, 410; EI E 100, 331, 335, 336, 341, 351, 352, 353, 367, 385, 386, 391,



431, 441, 447, 461, 462, 485, 486, 533; and 11 hours of technical elective courses. Technical elective courses may be chosen from EI E 333, 433, 442, 443, 451, 453, 487, 523, 525; Engr 597; Tc 415, 432, 433, 491, 534, 535; CSci 361, 521, 530, 551, 561.

Other Academic Requirements

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

Specializations

- [Emphasis - Computer Engineering](#)
- [Emphasis - RF & Wireless Engineering](#)
- [Emphasis - Telecommunications](#)

