Emphasis - General Program

- B.S.E.E. in Electrical Engineering
- Emphasis - General Program
- Degree Requirements

B.S.E.E. in Electrical Engineering

Description

The B.S. in electrical engineering program provides broad knowledge in basic and engineering sciences. The curriculum provides thorough knowledge of the field of electrical engineering. A manufacturing emphasis within BSEE is available to students admitted to the Center for Manufacturing Excellence (CME) Program. All other BSEE students follow the general program.

Minimum Total Credit Hours: 128

Goals/Mission Statement

Mission Statement

The mission of the electrical engineering department is to provide quality education to the students of the department.

Statement of Goals

- To provide high quality instruction and intellectual stimulation for the students
- To provide opportunity for undergraduate students to participate in research pursued by faculty
- To instill in our graduates the need for life-long learning
- To enable graduate students to pursue high quality research so that they will emerge as future technological leaders and academics
- To establish strong partnerships and lasting relationships with industry, government, professional societies, alumni and academia. These goals are consistent with the University of Mississippi Vision, Mission, and Core Values Statement and the flagship 2020 goals of UM/2020 Strategic Plan which focuses resources in the areas of instruction, research, and service.

Undergraduate Program Philosophy

The electrical engineering undergraduate program is founded on basic sciences, mathematics, and engineering science fundamentals. The program emphasizes theoretical foundation as well as 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 a broad-based program with an emphasis on the fundamentals of electrical engineering. The curriculum consists of 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 many areas of engineering
2. Circuits, electronics, and systems
3. Digital Logic, computer architecture
4. Technical elective courses
5. Engineering design

The BSEE degree program can be pursued with the manufacturing emphasis or no emphasis (general). In the manufacturing emphasis, a specific set of courses are required. For general, a broad choice of technical elective courses is available.

Program Educational Objectives

Based on our philosophy and goals the Faculty of the Department of Electrical Engineering have adopted the following Undergraduate Program Educational Objectives for graduates of the Bachelor of Science in Electrical Engineering (BSEE) undergraduate program. The graduates of the program will:

- Demonstrate professional engineering competence by holding positions of increasing responsibility in industry and/or government;
- Continue to improve their technical skills, knowledge and understanding through research and development activities, pursuit of professional certificates and/or advanced degrees;
- Pursue publications of patents and/or entrepreneurship.

Student Outcomes

Students of the Bachelor of Science in Electrical Engineering program will demonstrate achievement 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

Students must complete at least 18 semester hours of general education requirements: 3 hours in humanities, 3 hours in fine arts, 3 hours in humanities/fine
arts, 6 hours in social science (including Econ 310), and the remaining 3 hours can be in any of the humanities/fine arts, social science, or general education courses as specified by the School of Engineering.

Course Requirements
Major Coursework Requirements:
Specific requirements for the B.S.E.E. include: Writ 100, Writ 101, or Hon 101; Writ 102, Liba 102, or Hon 102; Math 261-264, Math 353; Chem 105, 115; Phys 211, 212, 221, 222; two Csci programming courses Csci 256, 356; Engr 309, 310, 360, 361; EI E 235, 236, 237, 331, 340, 341, 351, 352, 353, 367, 385, 386, 391, 431, 447, 461, 462, 485, 486.

Coursework for General Emphasis:
Specific requirements for the General Emphasis include EI E 100; ENGR 321; 14 credit hours of Technical Electives (BME 313, 314, 413; EL E 415, 425, 433, 441, 443, 451, 453, 482, 487, 523, 525, 533, 534, 535, 586; CSci 361, 423, 521, 530, 551, 581) for a total of 18 credit hours.

Coursework for Manufacturing Emphasis:
Specific requirements for the Manufacturing Emphasis include MANF 150, 152, 251, 252, 253, 255, 351, 353, 355, 455; 6 credit hours of Technical Electives (BME 313, 314, 413; EL E 415, 425, 433, 441, 443, 451, 453, 482, 487, 523, 525, 533, 534, 535, 586; CSci 361, 423, 521, 530, 551, 581) for a total of 24 credit hours.

Emphasis - General Program
Description
The B.S.E.E. with general emphasis provides broad training in basic and engineering sciences and fundamental knowledge of electrical engineering. The general emphasis provides greater flexibility for a student to choose 14 credit hours of technical elective courses from a breadth of electrical engineering topical areas.

Degree Requirements
The academic regulations for this degree program, as entered in the University of Mississippi Catalog, are in effect for the current or selected academic year and semester. The University of Mississippi reserves the right to 1) change or withdraw courses; 2) change rules for registration, instruction, and graduation; and 3) change other regulations affecting the student body at any time.

B.S.E.E. in Electrical Engineering
General Education

<table>
<thead>
<tr>
<th>REQUIREMENT</th>
<th>HOURS</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Year Writing I</td>
<td>3</td>
<td>Complete Hon 101, Writ 100 or Writ 101 with a passing grade.</td>
</tr>
<tr>
<td>First Year Writing II</td>
<td>3</td>
<td>Complete one of the following courses with a passing grade: Liba 102, Writ 102 or Hon 102.</td>
</tr>
<tr>
<td>3 hrs fine arts</td>
<td>3</td>
<td>Student must successfully complete 3 hours in the fine arts. The course may be chosen from art history, art appreciation, and criticism of art, dance, music, and theatre arts. Courses emphasizing the enhancement of skills and performance are not acceptable.</td>
</tr>
<tr>
<td>3 hrs fine arts/humanities</td>
<td>3</td>
<td>Complete 3 additional hours in any of the humanities or fine arts categories defined by the School of Engineering general education requirements.</td>
</tr>
<tr>
<td>3 hrs humanities</td>
<td>3</td>
<td>Complete 3 hrs of humanities choosing from course work in classics, literature, history, modern language, philosophy, religion, Southern studies, African American Studies, and Gender Studies.</td>
</tr>
<tr>
<td>3 hrs social sciences</td>
<td>3</td>
<td>Complete 3 hours of social sciences choosing from the following: economics, anthropology, political science, psychology, and sociology.</td>
</tr>
<tr>
<td>3 hrs general education work</td>
<td>3</td>
<td>Complete 3 hrs General Education work chosen from the following: additional fine art, additional social science, additional humanities. As 301, As 302, Bus 250, Bus 271, Edld 110, Edld 111, Edld 120, Edld 220, Engr 400, Mgmt 371, Mal 102, Nsc 211, Spch 102, or Spch 105.</td>
</tr>
<tr>
<td>Econ 310</td>
<td>3</td>
<td>Complete Econ 310 with a passing grade.</td>
</tr>
<tr>
<td>Math 261</td>
<td>3</td>
<td>Complete Math 261 with a passing grade.</td>
</tr>
<tr>
<td>Math 262</td>
<td>3</td>
<td>Complete Math 262 with a passing grade.</td>
</tr>
<tr>
<td>Math 263</td>
<td>3</td>
<td>Complete Math 263 with a passing grade.</td>
</tr>
<tr>
<td>Math 264</td>
<td>3</td>
<td>Complete Math 264 with a passing grade.</td>
</tr>
<tr>
<td>Math 353</td>
<td>3</td>
<td>Complete Math 353 with a passing grade.</td>
</tr>
<tr>
<td>Chem 105</td>
<td>3</td>
<td>Complete Chem 105 with a passing grade.</td>
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<tr>
<td>Chem 115</td>
<td>1</td>
<td>Complete Chem 115 with a passing grade.</td>
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<tr>
<td>Phys 211</td>
<td>3</td>
<td>Complete Phys 211 with a passing grade.</td>
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<tr>
<td>Phys 212</td>
<td>3</td>
<td>Complete Phys 212 with a passing grade.</td>
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<tr>
<td>Phys 221</td>
<td>1</td>
<td>Complete Phys 221 with a passing grade.</td>
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<tr>
<td>REQUIREMENT</td>
<td>HOURS</td>
<td>DESCRIPTION</td>
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<tr>
<td>Elective 1: Phys 222</td>
<td>1</td>
<td>Complete <strong>Phys 222</strong> with a passing grade.</td>
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</table>

## Major Requirements

<table>
<thead>
<tr>
<th>REQUIREMENT</th>
<th>HOURS</th>
<th>DESCRIPTION</th>
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</thead>
<tbody>
<tr>
<td><strong>El E 235</strong></td>
<td>3</td>
<td>Complete <strong>El E 235</strong> with a passing grade.</td>
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<tr>
<td><strong>El E 236</strong></td>
<td>1</td>
<td>Complete <strong>El E 236</strong> with a passing grade.</td>
</tr>
<tr>
<td><strong>El E 331</strong></td>
<td>3</td>
<td>Complete <strong>El E 331</strong> with a passing grade.</td>
</tr>
<tr>
<td><strong>El E 340, 237</strong></td>
<td>4</td>
<td>Complete <strong>El E 340, 237</strong> with a passing grade.</td>
</tr>
<tr>
<td><strong>El E 341</strong></td>
<td>3</td>
<td>Complete <strong>El E 341</strong> with a passing grade.</td>
</tr>
<tr>
<td><strong>El E 351</strong></td>
<td>3</td>
<td>Complete <strong>El E 351</strong> with a passing grade.</td>
</tr>
<tr>
<td><strong>El E 352</strong></td>
<td>3</td>
<td>Complete <strong>El E 352</strong> with a passing grade.</td>
</tr>
<tr>
<td><strong>El E 353</strong></td>
<td>1</td>
<td>Complete <strong>El E 353</strong> with a passing grade.</td>
</tr>
<tr>
<td><strong>El E 367</strong></td>
<td>3</td>
<td>Complete <strong>El E 367</strong> with a passing grade.</td>
</tr>
<tr>
<td><strong>El E 385</strong></td>
<td>3</td>
<td>Complete <strong>El E 385</strong> with a passing grade.</td>
</tr>
<tr>
<td><strong>El E 386</strong></td>
<td>1</td>
<td>Complete <strong>El E 386</strong> with a passing grade.</td>
</tr>
<tr>
<td><strong>El E 391</strong></td>
<td>3</td>
<td>Complete <strong>El E 391</strong> with a passing grade.</td>
</tr>
<tr>
<td><strong>El E 431</strong></td>
<td>3</td>
<td>Complete <strong>El E 431</strong> with a passing grade.</td>
</tr>
<tr>
<td><strong>El E 461</strong></td>
<td>1</td>
<td>Complete <strong>El E 461</strong> with a passing grade.</td>
</tr>
<tr>
<td><strong>El E 462</strong></td>
<td>2</td>
<td>Complete <strong>El E 462</strong> with a passing grade.</td>
</tr>
<tr>
<td><strong>Engr 309</strong></td>
<td>3</td>
<td>Complete <strong>Engr 309</strong> with a passing grade.</td>
</tr>
<tr>
<td><strong>Engr 310</strong></td>
<td>3</td>
<td>Complete <strong>Engr 310</strong> with a passing grade.</td>
</tr>
<tr>
<td><strong>Engr 360</strong></td>
<td>3</td>
<td>Complete <strong>Engr 360</strong> with a passing grade.</td>
</tr>
<tr>
<td><strong>Engr 361</strong></td>
<td>1</td>
<td>Complete <strong>Engr 361</strong> with a passing grade.</td>
</tr>
</tbody>
</table>

### School of Engineering GPA
**Must be at least a 2.0**

### Enroll in a BSEE emphasis
Enroll in an emphasis within the BSEE program.

## Emphasis - General Program

<table>
<thead>
<tr>
<th>REQUIREMENT</th>
<th>HOURS</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>El E 100</strong> or <strong>Engr 100</strong></td>
<td>3</td>
<td>Complete <strong>El E 100</strong> or <strong>Engr 100</strong> with a passing grade.</td>
</tr>
<tr>
<td><strong>Csci 256</strong></td>
<td>3</td>
<td>Complete <strong>Csci 256</strong> with a passing grade.</td>
</tr>
<tr>
<td><strong>Csci 356</strong></td>
<td>3</td>
<td>Complete <strong>Csci 356</strong> with a passing grade.</td>
</tr>
<tr>
<td><strong>El E 485</strong></td>
<td>2</td>
<td>Complete <strong>El E 485</strong> with a passing grade.</td>
</tr>
<tr>
<td><strong>El E 486</strong></td>
<td>1</td>
<td>Complete <strong>El E 486</strong> with a passing grade.</td>
</tr>
<tr>
<td><strong>14 hrs technical electives</strong></td>
<td>14</td>
<td>Complete 14 hours of technical elective courses. Technical elective courses may be chosen from <strong>El E 313, 314, 413, 414, 415, 426, 433, 441, 443, 447, 451, 453, 482, 487, 523, 525, 533, 534, 535, 596; Engr 597; CSci 361, 423, 521, 530, 551, 561.</strong></td>
</tr>
</tbody>
</table>

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The University of Mississippi is accredited by the Southern Association of Colleges and Schools Commission on Colleges to award certificates and baccalaureate, master’s, specialist, and doctoral degrees. Contact the Commission on Colleges at 1866 Southern Lane, Decatur, Georgia 30033-4097, call 404-679-4500, or visit online at www.sacscoc.org for questions about the accreditation.

[https://catalog.olemiss.edu/2021/spring/undergraduate/engineering/electrical-computer-engineering/bs-elm-engre/e-gen-emp](https://catalog.olemiss.edu/2021/spring/undergraduate/engineering/electrical-computer-engineering/bs-elm-engre/e-gen-emp)