Emphasis - Aerospace Engineering

B.S. in Engineering

Description

The B.S. in engineering provides the student with a fundamental knowledge of engineering science and prepares graduates for a variety of careers in industry and government, or for advanced study in engineering, business, or professional school.

Minimum Total Credit Hours: 127

Goals/Mission Statement

Program Educational Objectives

Graduates from the program, within 3-5 years after graduation, will:

- Meet or exceed the expectations of employers of general engineers;
- Continue their professional development by pursuing advanced study, including licensure and certifications if they so desire; and
- Continue their professional development by pursuing leadership opportunities and other positions of service in their profession and/or communities.

Student Outcomes

BSE 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 judgements, 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 judgement to draw conclusions
7. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies

General Education Requirements

- Writ 101 and 102
- 3 hours of fine arts
- 3 hours of humanities
- 3 hours of fine arts, languages (modern, Greek, or Latin), or humanities
- 3 hours of social science
- 3 additional hours of humanities, languages (modern, Greek, or Latin), social science, or a general education course as defined by the School of Engineering
- Econ 310
- Math 261, 262, 263, 264, and 353
- Chem 105, 106, 115, 116
- Phys 211, 212, 221, 222

Course Requirements

- Engr 100 or Engr 102,
- Csci 251
- Engr 309, 310, 312, 313, 314, 321, 323, 330, 360, 361, 400, and Engr 450
- Manf 460
- 12 hours of approved engineering electives
  - 3 hours of which must be above the 200 level and
  - 9 hours of which must be above the 300 level
- The pre-approved engineering electives are Engr 340, BME 200, BME 222, BME 301, BME 311, BME 313, BME 314, BME 333, BME 350, BME 370, BME 510, BME 523, BME 524, Ch E 307, Ch E 308, Ch E 413, Ch E 520, Ch E 521, Ch E 522, Ch E 523, Ch E 524, C E 207, C E 208, C E 210, C E 325, C E 471, C E 472, Csci 111, Csci 112, Csci 343, El E 235, El E 331, G E 305, G E 405, M E 324, M E 325, M E 401, M E 406, and M E 421. Engineering courses not included in this list must be pre-approved by the director of general engineering

Emphasis - Aerospace Engineering

Description

“The emphasis in aerospace engineering provides a cross-disciplinary foundation in topics critical to the modern aerospace industry. The curriculum provides core knowledge in typical aerospace topics such as fluid mechanics and structures while also providing a foundation in digital architectures and programming, materials, and electrical systems. The curriculum appropriately prepares the student for either entry into the aerospace industry or to graduate education in aerospace-related fields. Electives can be selected under approval of the student’s academic adviser to further a knowledge base in relevant

aerospace areas such as flight mechanics, controls, and digital systems, and communications."

Course Requirements

Engineering Electives (12 hours) * Ch E 316: Chemical Engineering Fluid Mechanics (3) * M E 401: Thermo-Fluid Dynamics (3) * M E 402: Elements of Propulsion (3) * M E 529: Aerodynamics (3)

Emphasis Courses (3 hours) * PHYS 308: Mathematical Physics (3)

Emphasis Courses (select 9 hours from suggested or other by approval) Csci 111, Csci 112, ISS 125, El E 235, El E 236, PHYS 310, Csci 325, Csci 356, C E 310, M E 527

Open Emphasis Hours (6 hours open for student selection based on interest)