

Emphasis - Manufacturing

- [B.S.M.E. in Mechanical Engineering](#)
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B.S.M.E. in Mechanical Engineering

Description

The B.S.M.E. provides students with fundamentals in the field and a specialization in the following disciplines: mechanics, thermodynamics, fluid mechanics, materials, design, and laboratory diagnostics. The preparation fosters an inquisitiveness and understanding that will preclude future obsolescence of the mechanical engineering graduate.

Minimum Total Credit Hours: 128

Goals/Mission Statement

The program educational objectives of the Department of Mechanical Engineering derive their foundation from the statement of purpose for The University of Mississippi's statement of purpose and vision statement. The academic mission of the Department of Mechanical Engineering (ME) is focused on broad, overarching goals that reflect both the academic purpose of the School of Engineering and the university. The stated university goals have been used to refine the goals and objectives of the department. The goals and objectives have been established from input by the faculty, students, and the Ole Miss Engineering School Advisory Board as constituency groups. These goals and objectives are listed as follows.

- Educate students in the broad scope of the mechanical engineering discipline so as to be successful in applying and advancing knowledge in industry, academia, and related fields;
- Conduct basic and applied research in fields related to mechanical engineering to maintain and enhance the quality and reputation of the faculty and the School of Engineering;
- Serve industry, the engineering community, and the community at large in the State of Mississippi, the nation, and the world;
- Teach students the influence of issues related to health, safety, economy, environment, and society while seeking engineering solutions.

Program Educational Objectives

This process and these goals have resulted in the development of the Department of Mechanical Engineering curriculum consisting of lecture, design, and laboratory courses that stress the departmental goals. The mechanical engineering faculty, advisory board, and students, as constituency groups, have established the following undergraduate program educational objectives:

1. Graduates will meet or exceed the expectations of employers of mechanical engineers;
2. Qualified graduates will continue their professional development by pursuing advanced study if they so desire;
3. Graduates will continue their professional development by pursuing leadership positions in their profession and/or communities.

Student Outcomes

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

Students must complete at least 15 semester hours of general education requirements: 6 hours in social and behavioral sciences, 6 hours in humanities, and 3 hours in fine and performing arts. The social and behavioral sciences must include Econ 310. See [the General Education Requirements of the School of Engineering](#).

Course Requirements

Specific requirements for the B.S.M.E. include Writ 100, Writ 101, or Hon 101; Writ 102, Liba 102 or Hon 102; Math 261-264, Math 353; Chem 105, 106, 115, 116; Phys 211, 212, 221, 222; Csci 251; Econ 310; Engr 101, 111, 309, 310 or Math 375, 312, 313, 314, 321, 323, 326, 360, 361; M E 101, 201, 324, 325, 326, 330, 401, 402, 416, 419, 420, 426, 428, 437, 438, 553.

One technical elective must be chosen from thermal/fluid elective courses including M E 406, 529 or Engr 551.

A separate second technical elective must be chosen from any of the following elective courses including M E 406, 417, 418, 421, 422, 521, 522, 523, 524, 526, 527, 529, 530, 531, 532, 533, 534, 535, 537, 538, 540, 541, 543, 555, Engr 410, 515, 523, 546, 554, 558, 559, 585, 590, 593.

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of the mechanical engineering graduate. An emphasis in manufacturing is also available under the B.S.M.E. degree in cooperation with the Center for Manufacturing Excellence. The B.S.M.E. with emphasis in manufacturing provides broad training in the basic and engineering sciences along with a cross-disciplinary account and business focus on manufacturing.

General Education Requirements

Students must complete at least 15 semester hours of general education requirements: 6 hours in social and behavioral sciences, 6 hours in humanities, and 3 hours in fine and performing arts. The social and behavioral sciences must include Econ 310. 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.

Course Requirements

Specific requirements for the B.S.M.E. with an emphasis in manufacturing include Csci 251; Engr 101, 111, 309, 310 or Math 375, 312, 313, 314, 321, 323, 360; M E 201 or Manf 250, 324, 325, 330, 401, 416, 419, 420, 426, 428, 438, 553; Manf 150, 152, 251, 252, 255, 325, 351, 353, 355, 455. Two electives are required and may be chosen from the following courses: M E 402, 406, 417, 418, 421, 422, 521, 522, 523, 524, 526, 527, 529, 530, 531, 532, 533, 534, 535, 537, 538, 540, 541, 543, 555; Engr 410, 496, 515, 558, 559, 585, 590, 593; Fin 331; Mgmt 371, 372, 383, 466, 476; Bus 322; Mktg 351; GB 350, 370; or Manf 460, 465, 470.

