Emphasis - Manufacturing

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 their employers.
2. Graduates will pursue advanced study, if desired.
3. Graduates will assume leadership roles in their professions and/or communities.

Student Outcomes

Students of the Bachelor of Science in Mechanical 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.

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 309, 310 or Math 375, 312, 313, 314, 321, 323, 330, 360, 361, 420, 553; M E 101, 201, 324, 325, 401, 402, 416, 419, 426, 428, 438.

One technical elective must be chosen from Thermal/Fluid Elective including M E 406, 529 or Engr 551.

A second technical elective must be chosen from Design Elective (includes 1 hour of design): M E 406, 417, 418, 422, 523, 524, 526, 527, 531, 534, 535, 538, 540, 541, 555 or Engr 559.

A third technical elective must be chosen from any of the Thermal/Fluid Elective courses, Design Elective courses or Other Electives including M E 417, 418, 421, 521, 522, 523, 524, 529, 530, 532, 533, 537, 543, Engr 410, 515, 558, 559, 585, 590, 593.

Emphasis - Manufacturing

Description

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

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/behavioral and social science/fine arts are as specified by the School of Engineering general education requirements but must include Bus 250 and Econ 310.

Course Requirements

Specific requirements for the B.S.M.E. with an emphasis in manufacturing include Csci 251; Engr 309, 310 or Math 375, 312, 313, 314, 321, 323, 330, 360, 420, 553; M E 324, 325, 401, 416, 419, 426, 428; Manf 150, 250, 251, 252, 253, 254, 350, 351, 450, 451, 452. 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.

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.M.E. in Mechanical Engineering

General Education

REQUIREMENT	HOURS	DESCRIPTION
Chem 105	3	Complete Chem 105 with a passing grade.
Chem 115	1	Complete Chem 115 with a passing grade.
First Year Writing I	3	Complete Hon 101, Writ 100 or Writ 101 with a passing grade.
First Year Writing II	3	Complete one of the following courses with a passing grade: Liba 102, Writ 102 or Hon 102.
Math 261	3	Complete Math 261 with a passing grade.
Math 262	3	Complete Math 262 with a passing grade.
Math 263	3	Complete Math 263 with a passing grade.
Math 264	3	Complete Math 264 with a passing grade.
Math 353	3	Complete Math 353 with a passing grade.
Phys 211	3	Complete Phys 211 with a passing grade.
Phys 212	3	Complete Phys 212 with a passing grade.
Phys 221	1	Complete Phys 221 with a passing grade.
Phys 222	1	Complete Phys 222 with a passing grade.
3 hrs fine arts/humanities	3	Complete 3 hours of humanities or fine arts choosing from course work in classics, literature, history, modern language, philosophy, religion, Southern studies, African American Studies, and Gender Studies; art history, art appreciation, and criticism of art, dance, music, and theatre arts. Courses emphasizing the enhancement of skills and performance are not acceptable.
3 hrs fine arts	3	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.
3 hrs humanities	3	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.
3 hrs social science	3	Complete 3 hours of social sciences choosing from the following; economics, anthropology, political science, psychology, and sociology.

General Education (non-emphasis)

REQUIREMENT	HOURS	DESCRIPTION
Chem 106	3	Complete Chem 106 with a passing grade.
Chem 116	1	Complete Chem 116 with a passing grade.
3 add'l hrs social science	3	Complete 3 additional hours of social sciences choosing from the following; economics, anthropology, political science, psychology, and sociology.

REQUIREMENT	HOURS	DESCRIPTION
3 hrs general education work	3	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, Msl 102, Nsc 211, or Spch 105.

Major Requirements

REQUIREMENT	HOURS	DESCRIPTION
M E 324	3	Complete M E 324 with a passing grade.
M E 325	3	Complete M E 325 with a passing grade.
M E 401	3	Complete M E 401 with a passing grade.
M E 416	1	Complete M E 416 with a passing grade.
M E 419	1	Complete M E 419 with a passing grade.
M E 426	3	Complete M E 426 with a passing grade.
M E 428	3	Complete M E 428 with a passing grade.
School of Engineering GPA		Must be at least a 2.0

Major Requirements II

REQUIREMENT	HOURS	DESCRIPTION
Csci 251	3	Complete Csci 251 with a passing grade.
Econ 310	3	Complete Econ 310 with a passing grade.
Engr 309	3	Complete Engr 309 with a passing grade.
Engr 310 or Math 375	3	Complete Engr 310 or Math 375 with a passing grade.
Engr 312	3	Complete Engr 312 with a passing grade.
Engr 313	3	Complete Engr 313 with a passing grade.
Engr 314	1	Complete Engr 314 with a passing grade.
Engr 321	3	Complete Engr 321 with a passing grade.
Engr 323	3	Complete Engr 323 with a passing grade.
Engr 330	3	Complete Engr 330 with a passing grade.
Engr 360	3	Complete Engr 360 with a passing grade.
Engr 420	3	Complete Engr 420 with a passing grade.
Engr 553	3	Complete Engr 553 with passing grade

Non-specialization Requirements

REQUIREMENT	HOURS	DESCRIPTION
M E 201	2	Complete M E 201 with a passing grade.
Engr 361	1	Complete Engr 361 with a passing grade.
Engr 310 or Math 375	3	Complete Engr 310 or Math 375 with a passing grade.
M E 101	1	Complete M E 101 with a passing grade.
M E 402	3	Complete M E 402 with a passing grade.
M E 438	3	Complete M E 438 with a passing grade.
Thermal/Fluid tech elective	3	Complete either M E 406, M E 529, or Engr 551 with a passing grade.
Design tech elective	3	Complete one of the following electives with a passing grade: M E 406, M E 417, M E 418, M E 422, M E 523, M E 524, M E 526, M E 527, M E 531, M E 534, M E 535, M E 538, M E 540, M E 541, M E 555 or Engr 559.
Tech elective	3	Choose a third technical elective from any of the Thermal/Fluid Elective courses, Design Elective courses or Other Electives including M E 417, 418, 421, 521, 522, 523, 524, 529, 530, 532, 533, 537, 543, Engr 410, 515, 523, 546, 554, 558, 559, 585, 590, 593.

Emphasis - Manufacturing

REQUIREMENT	HOURS	DESCRIPTION
Bus 250	3	Complete Bus 250 with a passing grade.
Manf 150	1	Complete Manf 150 with a passing grade.
Manf 250	1	Complete Manf 250 with a passing grade.
Manf 251	3	Complete Manf 251 with a passing grade.
Manf 252	1	Complete Manf 252 with a passing grade.
Manf 253	3	Complete Manf 253 with a passing grade.
Manf 254	3	Complete Manf 254 with a passing grade.
Manf 350	3	Complete Manf 350 with a passing grade.
Manf 351	1	Complete Manf 351 with a passing grade.
Manf 450	3	Complete Manf 450 with a passing grade.
Manf 451	1	Complete Manf 451 with a passing grade.
Manf 452	2	Complete Manf 452 with a passing grade.
2 Manf Technical electives	6	Choose two electives 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