Emphasis - Standard

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 523, Engr 551 or Engr 554.

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, 546, 554, 558, 559, 585, 590, 593.

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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.

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General Education

REQUIREMENT	HOURS	DESCRIPTION
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.
3 hrs fine arts	3	Complete 3 hrs of fine arts with a passing grade chosen from art history, music, dance, and theatre arts. Studio and workshop courses cannot be used to satisfy this requirement. Courses that satisfy this requirement are any Art History (AH); Liba 130, 204, 314; Mus 101, 102, 103, 104, 105; Danc 200; Thea 201, 202.
6 hrs humanities	6	Successfully complete 6 hrs of humanities with a passing grade chosen from the following: African African American studies (Aas 201, 202), classics (Clc), English (Eng 220-226), gender studies (G St 201, 202), history (Hst), liberal arts (Liba 202, 305, 312), philosophy (Phil), religion (Rel), Southern studies (S St 100-level), and either Hon 101 or 102 (if not being used to fulfill composition requirements).
3 hrs social sciences	3	Successfully complete 3 hrs of social science with a passing grade chosen from anthropology (Anth), economics (Econ), political science (Pol), psychology (Psy), sociology (Soc), Liba 203, 313, or Hon 101, 102
Econ 310	3	Complete Econ 310 with a passing grade.

General Education II

REQUIREMENT	HOURS	DESCRIPTION
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.
Chem 105	3	Complete Chem 105 with a passing grade.
Chem 115	1	Complete Chem 115 with a passing grade.
Phys 211	3	Complete Phys 211 with a passing grade.
Phys 221	1	Complete Phys 221 with a passing grade.
Phys 212	3	Complete Phys 212 with a passing grade.
Phys 222	1	Complete Phys 222 with a passing grade.

Major Requirements

REQUIREMENT	HOURS	DESCRIPTION
M E 201 or Manf 250	3	Complete M E 201 or Manf 250 with a passing grade.
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 330	3	Complete M E 330 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 420	3	Complete M E 420 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.
M E 438	3	Complete M E 438 with a passing grade.
M E 553	3	Complete M E 553 with a passing grade.

REQUIREMENT	HOURS	DESCRIPTION
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.
Engr 101 & 111	3	Complete Engr 101/111 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 360	3	Complete Engr 360 with a passing grade.

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REQUIREMENT	HOURS	DESCRIPTION
Chem 106	3	Complete Chem 106 with a passing grade.
Chem 116	1	Complete Chem 116 with a passing grade.
Engr 361	1	Complete Engr 361 with a passing grade.
M E 101	1	Complete M E 101 with a passing grade.
M E 326	4	Complete M E 326 with a passing grade.
M E 402	3	Complete M E 402 with a passing grade.
M E 437	2	Complete M E 437 with a passing grade.
Thermal/Fluid tech elective	3	Complete either M E 406, M E 529, or Engr 523, Engr 551, or Engr 554 with a passing grade.
Tech elective	3	Choose a second 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, 546, 558, 559, 585, 590, 593.