Emphasis - Pre Med

B.S.B.E. in Biomedical Engineering

Description

The Bachelor of Science in Biomedical Engineering (B.S.B.E.) degree program will prepare engineering students at the University of Mississippi to capably apply advanced mathematics, science, and engineering to solve the problems at the interface of engineering, biology, and medicine. Moreover, the curriculum will prepare graduates with the ability to make measurements on and interpret data from living systems, addressing the problems associated with the interaction between living and nonliving materials and systems.

The graduates of the program will be able to pursue (i) employment in biomedical or related industries (ii) graduate studies in biomedical engineering or related disciplines, and (iii) pursue professional careers in medicine, dentistry, pharmacy, or patent law.

Program Educational Objectives

Following graduation and during the first several postgraduate years, biomedical engineering baccalaureate degree holders from the University of Mississippi will possess skill sets to accomplish the following:

1. Meet evolving expectations of future employers in the biomedical engineering workplace as well as other professional careers
2. Exhibit a systematic approach to problem solving in their professional practice including quantitative and analytical skills weighted with considerations towards a sustainable future.
3. Continue their professional development by pursuing advanced studies in medicine and other professional fields if desired.

Student Outcomes

Biomedical engineering 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 judgment to draw conclusions
7. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies

Minimum Total Credit Hours: 127

General Education Requirements

For detailed information see the the General Education Requirements of the School of Engineering.

Fifteen Credits of Liberal Arts:

Students must complete at least 6 credit hours in the social and behavioral sciences, at least 6 credit hours from humanities, and at least 3 credit hours from fine and performing arts appreciation.

For the purpose of these requirements:

Social/behavioral sciences

Social/behavioral sciences will include anthropology (Anth), economics (Econ), liberal arts (Liba 203, Liba 313), political science (Pol), psychology (Psy), sociology (Soc), and either Hon 101 or Hon 102 (if not being used to fulfill composition requirements)..

Humanities

Humanities will include 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).

Fine and performing arts apprecation

Fine and performating arts appreciation will include courses in art history (AH), liberal arts (Liba 130, 204, 314), music (Mus 101-105), and theatre & film (Thea 201, 202; Danc 200).

Course Requirements

Specific requirements for the B.S.B.E. include Writ 100, Writ 101, or Hon 101; Writ 102, Liba 102, or Hon 102; Engr 101, 111; Math 261-264, Math 353; Chem 105, 106, 115, 116, 221, 225; Phys 211, 212, 221, 222; Bisc 160, 161, 162, 163; Csci 256 or BME 256; Engr 360; BME 200, 222, 305, 311, 313, 314, 315, 333, 370, 400, 444, 461, 462.

Other Academic Requirements

Students in the Department of Biomedical Engineering who consider independent research as part of their educational experience may take an independent research course (up to 3 hours) in engineering. Additional opportunities for research in chemistry, biology, physics, or pharmacy may be

approved with permission of the BME chair.

Emphasis - Pre Med

Description

Biomedical engineering is a natural course of study to get into medical school. Courses in biology and chemistry coupled with the rigor of a well-established engineering curricula position students to succeed in medical school and their professional career.

Course Requirements

Specific requirements for the pre-med emphasis include:

- Chem 222
- Chem 226
- Chem 471
- Bisc 336
- Bisc 440
- Choose two courses from BME 510, 520, 522, 523, 524.
- Additionally, students must take Psy 201 and Soc 101 (6 hours), which may count as a social science elective.

Other Academic Requirements

Students in the Department of Biomedical Engineering who consider independent research as part of their educational experience may take an independent research course (300 level or higher, 3 hours) to count as an emphasis course. Additional opportunities for research in chemistry, biology, physics, or pharmacy may be approved with permission of the BME chair.

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	Successfully complete Hon 101, Writ 100, or Writ 101 with a passing grade.
First Year Writing II	3	Successfully complete one of the following courses with a passing grade: Writ 102, Liba 102, Hon 102.
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 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.

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.
Bisc 160	3	Complete Bisc 160 with a passing grade.
Bisc 161	1	Complete Bisc 161 with a passing grade.
Bisc 162	3	Complete Bisc 162 with a passing grade.
Bisc 163	1	Complete Bisc 163 with a passing grade.
Chem 105	3	Complete Chem 105 with a passing grade.
Chem 115	1	Complete Chem 115 with a passing grade.
Chem 106	3	Complete Chem 106 with a passing grade.
Chem 116	1	Complete Chem 116 with a passing grade.

REQUIREMENT	HOURS	DESCRIPTION
Chem 221	3	Complete Chem 221 with a passing grade.
Chem 225	1	Complete Chem 225 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
BME 200	2	Complete BME 200 with a passing grade.
BME 222	3	Complete BME 222 with a passing grade.
BME 305	3	Complete BME 305 with a passing grade.
BME 311	3	Complete BME 311 with a passing grade.
BME 313	3	Complete BME 313 with a passing grade.
BME 314	1	Complete BME 314 with a passing grade.
BME 315	3	Complete BME 315 with a passing grade.
BME 333	3	Complete BME 333 with a passing grade.
BME 400	1	Complete BME 400 with a passing grade.
BME 370	3	Complete BME 370 with a passing grade.
BME 444	3	Complete BME 444 with a passing grade.
BME 461	2	Complete BME 461 with a passing grade.
BME 462	2	Complete BME 462 with a passing grade.

Major Requirements II

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

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REQUIREMENT	HOURS	DESCRIPTION
BME 256	3	Complete BME 256 with a passing grade.
Chem 222 & 226	4	Complete Chem 222 & Chem 226 with a passing grade.
Chem 471	3	Complete Chem 471 with a passing grade.
Bisc 336	4	Complete Bisc 336 with a passing grade.
Bisc 440	4	Complete Bisc 440 with a passing grade.
6 hrs BME courses	6	Complete 6 hrs of BME courses with a passing grade chosen from the following: BME 510, 520, 522, 523, 524.
Psy 201	3	Complete Psy 201 with a passing grade.
Soc 101	3	Complete Soc 101 with a passing grade.