

## Emphasis - Biomolecular

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## B.S.B.E. in Biomedical Engineering Description

This Bachelor of Science in Biomedical Engineering (BME) 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 non-living 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 discipline, and (iii) pursue professional careers in medicine, dentistry, pharmacy, or patent law.

### Minimum Total Credit Hours: 127

### General Education Requirements

The general education requirements of the program are consistent with The University of Mississippi's tradition of educating engineering leaders through the school's strong interaction with the university's liberal arts programs. Further, these requirements are established to fulfill the school's published mission of preparing "students with a broad-based education" intended to develop "leadership skills" and "communication skills." The core/general education requirements for the School of Engineering include WRIT 101, WRIT 102; Math 261-262; and a minimum of 8 credit hours of laboratory science courses as specified by each department. In addition, 18 credit hours, as described below, must be taken. Students should check with their department to learn the specific course requirements for an individual program. Fifteen Credits of Liberal Arts - Students must complete at least 15 semester hours consisting of social/behavioral sciences, humanities, and fine arts course work. At least 6 credit hours must be in the social/behavioral sciences, and at least 9 credit hours must be in combined humanities and fine arts courses with at least 3 semester hours from each of these areas. For the purpose of these requirements, social/behavioral sciences will include anthropology, economics, political science, psychology, and sociology; humanities will include classics, literature, history, modern languages, philosophy, religion, African American Studies, Gender Studies, and Southern Studies; and fine arts will include courses in the history, appreciation, and criticism of art, dance, music, and theatre arts. (Courses emphasizing the enhancement of skills and performance are not acceptable.) Honors courses may be used to meet these requirements as appropriate. An additional 3 hours of are required in Econ 310: Engineering Economy (3 Hrs.)

### Course Requirements

Additional requirements for all Biomedical Engineering Tracks include:

Sem Hours	Category	Courses
9	Math	Math 263, 264 and 353
24	Natural (laboratory) Sciences	Chem 105, 106, 115, 116, 221, 225; Bisc 160, 161; and Phys 211, 212, 221, 222
36	Biomedical Engineering Core	Csci 251, Ch E 307, Ch E 308, El E 313, El E 314, BME 461, BME 462, Engr 310, Engr 360, El E 331, Engr 400, BME 200, BME 322, BME 333, BME 444, BME 461, and BME 461

In addition to the major course requirements, students must complete the requirements for an emphasis area, each with its own specific requirements.

## Emphasis - Biomolecular Course Requirements

Bisc 162, 163, 333; Ch E 417, 421, 520, 545; 6 Hours of engineering technical electives; and 3 hours of a track approved elective.

### 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 <a href="#">Hon 101</a> , <a href="#">Writ 100</a> , or <a href="#">Writ 101</a> with a passing grade.
First Year Writing II	3	Successfully complete one of the following courses with a passing grade: <a href="#">Writ 102</a> , <a href="#">Liba 102</a> , <a href="#">Hon 102</a> .
<a href="#">Math 262</a>	3	Complete <a href="#">Math 262</a> with a passing grade.
<a href="#">Math 261</a>	3	Complete <a href="#">Math 261</a> with a passing grade.
6-8 hrs science	6	Complete 6 hours of laboratory science.
2 science labs	8	Successfully complete at least two science laboratory courses.
3 hrs social sciences	3	Complete 3 hours of social sciences choosing from the following; economics, anthropology, political science, psychology, and sociology.



REQUIREMENT	HOURS	DESCRIPTION
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, Gender Studies, and Southern Studies.
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 fine arts/humanities	3	Complete 3 additional hours in any of the humanities or fine arts categories defined by the School of Engineering general education requirements.
<a href="#">Econ 310</a>	3	Successfully complete <a href="#">Econ 310</a> with a passing grade.

### Major Requirements

REQUIREMENT	HOURS	DESCRIPTION
<a href="#">Math 263</a>	3	Complete <a href="#">Math 263</a> with a passing grade.
<a href="#">Math 264</a>	3	Complete <a href="#">Math 264</a> with a passing grade.
<a href="#">Math 353</a>	3	Complete <a href="#">Math 353</a> with a passing grade.
<a href="#">Chem 105</a>	3	Complete <a href="#">Chem 105</a> with a passing grade.
<a href="#">Chem 106</a>	3	Complete <a href="#">Chem 106</a> with a passing grade.
<a href="#">Chem 115</a>	1	Complete <a href="#">Chem 115</a> with a passing grade.
<a href="#">Chem 221</a>	3	Complete <a href="#">Chem 221</a> with a passing grade.
<a href="#">Chem 225</a>	1	Complete <a href="#">Chem 225</a> with a passing grade.
<a href="#">Bisc 160</a>	3	Complete <a href="#">Bisc 160</a> with a passing grade.
<a href="#">Bisc 161</a>	1	Complete <a href="#">Bisc 161</a> with a passing grade.
<a href="#">Phys 212</a>	3	Complete <a href="#">Phys 212</a> with a passing grade.
<a href="#">Phys 221</a>	1	Complete <a href="#">Phys 221</a> with a passing grade.
<a href="#">Phys 222</a>	1	Complete <a href="#">Phys 222</a> with a passing grade.
<a href="#">Csci 251</a>	3	Complete <a href="#">Csci 251</a> with a passing grade.
<a href="#">Ch E 307</a>	2	Complete <a href="#">Ch E 307</a> with a passing grade.
<a href="#">Ch E 308</a>	2	Complete <a href="#">Ch E 308</a> with a passing grade.
<a href="#">BME 313</a>	3	Complete <a href="#">BME 313</a> with a passing grade.
<a href="#">BME 314</a>	1	Complete <a href="#">BME 314</a> with a passing grade.
<a href="#">EI E 331</a>	3	Complete <a href="#">EI E 331</a> with a passing grade.
<a href="#">Engr 310</a>	3	Complete <a href="#">Engr 310</a> with a passing grade.
<a href="#">Engr 360</a>	3	Complete <a href="#">Engr 360</a> with a passing grade.
<a href="#">Engr 400</a>	1	Complete <a href="#">Engr 400</a> with a passing grade.
<a href="#">BME 200</a>	2	Complete <a href="#">BME 200</a> with a passing grade.
<a href="#">BME 462</a>	2	Complete <a href="#">BME 462</a> with a passing grade.
<a href="#">BME 461</a>	2	Complete <a href="#">BME 461</a> with a passing grade.
<a href="#">BME 444</a>	3	Complete <a href="#">BME 444</a> with a passing grade.
<a href="#">BME 333</a>	3	Complete <a href="#">BME 333</a> with a passing grade.
<a href="#">BME 222</a>	3	Complete <a href="#">BME 222</a> with a passing grade.

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REQUIREMENT	HOURS	DESCRIPTION
<a href="#">Bisc 162</a>	3	Complete <a href="#">Bisc 162</a> with a passing grade.



REQUIREMENT	HOURS	DESCRIPTION
<a href="#">Bisc 163</a>	1	Complete <a href="#">Bisc 163</a> with a passing grade.
<a href="#">Bisc 333</a>	4	Complete <a href="#">Bisc 333</a> with a passing grade.
<a href="#">Ch E 417</a>	3	Complete <a href="#">Ch E 417</a> with a passing grade.
<a href="#">Ch E 421</a>	3	Complete <a href="#">Ch E 421</a> with a passing grade.
<a href="#">Ch E 520</a>	3	Complete <a href="#">Ch E 520</a> with a passing grade.
<a href="#">Ch E 545</a>	3	Complete <a href="#">Ch E 545</a> with a passing grade.
3 hrs engineering elective	3	Complete 3 hours of engineering electives with a passing grade.
9 hrs emphasis elective	9	Complete 9 hours of emphasis electives with a passing grade.

