

## Emphasis - Manufacturing

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### **B.S.Ch.E. in Chemical Engineering** **Description**

The B.S. in chemical engineering provides the student with a fundamental knowledge of chemical engineering science and prepares graduates for a variety of careers in industry and government, or for advanced study in engineering, business, or professional school.

**Minimum Total Credit Hours: 128**

#### **Goals/Mission Statement**

#### **Program Educational Objectives**

Graduates from the Department of Chemical Engineering of the University of Mississippi, within 3-5 years after graduation, will:

1. Meet or exceed the expectations of employers of chemical engineers;
2. Continue their professional development by pursuing advanced study if they so desire; and
3. Continue their professional development by pursuing leadership opportunities and other positions of service in their profession and/or communities.

#### **Student Outcomes**

In accordance with ABET accreditation requirements, BSChE 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 judgement to draw conclusions
7. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies

#### **General Education Requirements**

For detailed information see the [the General Education Requirements of the School of Engineering](#).

Students must complete at least 15 hours of general education requirements: 3 hours of fine arts, 6 hours of humanities, and 6 hours of social science, with the exception that math content courses may not be used to satisfy any of these required 15 credits.

#### **Course Requirements**

Alternatives for 300-level technical electives: Chem 222, Manf 253, Manf 254, the combination of Bisc 160, 161, 162, and 163. In the case of the Bisc 160-163 series, the student must take all 8 credits to fulfill the requirement for one 3-credit technical elective. A maximum of 3 credits of Ch E 330 may be used to satisfy one of the technical elective requirements.

#### **Other Academic Requirements**

Students in the Department of Chemical Engineering are encouraged to take the Fundamentals of Engineering examination prior to awarding of the baccalaureate degree.

### **Emphasis - Manufacturing** **Course Requirements**

| Course           | Hours          |
|------------------|----------------|
| Advanced Science | 3 Credit Hours |
| Bus 250          | 3 Credit Hours |
| Manf 150         | 1 Credit Hour  |
| Manf 152         | 1 Credit Hour  |
| Manf 251         | 3 Credit Hours |
| Manf 252         | 1 Credit Hour  |
| Manf 253         | 3 Credit Hours |
| Manf 255         | 1 Credit Hour  |
| Manf 351         | 1 Credit Hour  |



**Course**

Manf 353  
Manf 355  
Manf 455

**Hours**

3 Credit Hour  
1 Credit Hour  
3 Credit Hours

**Other Academic Requirements**

Acceptance into the Center for Manufacturing Excellence.

**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.Ch.E. in Chemical Engineering**

**General Education**

| REQUIREMENT           | HOURS | DESCRIPTION  |
|-----------------------|-------|--|
| First Year Writing I  | 3     | 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     | Complete <a href="#">Hon 102</a> , <a href="#">Liba 102</a> , or <a href="#">Writ 102</a> with a passing grade.  |
| 6 hrs humanities      | 6     | Successfully complete 6 hrs of humanities with a passing grade chosen from the following: African American studies ( <a href="#">Aas 201</a> , <a href="#">202</a> ), classics (Clc), English ( <a href="#">Eng 220-226</a> ), gender studies ( <a href="#">G St 201</a> , <a href="#">202</a> ), history (Hst), liberal arts ( <a href="#">Liba 202</a> , <a href="#">305</a> , <a href="#">312</a> ), philosophy (Phil), religion (Rel), Southern studies ( <a href="#">S St 100</a> -level), and either <a href="#">Hon 101</a> or <a href="#">102</a> (if not being used to fulfill composition requirements). |
| 6 hrs social sciences | 6     | Students need to complete 6 hours of social science with a passing grade chosen from the following: anthropology (Anth), economics (Econ), liberal arts ( <a href="#">Liba 203</a> , <a href="#">Liba 313</a> ), political science (Pol), psychology (Psy), sociology (Soc), and either <a href="#">Hon 101</a> or <a href="#">Hon 102</a> (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); <a href="#">Liba 130</a> , <a href="#">204</a> , <a href="#">314</a> ; <a href="#">Mus 101</a> , <a href="#">102</a> , <a href="#">103</a> , <a href="#">104</a> , <a href="#">105</a> ; <a href="#">Danc 200</a> ; <a href="#">Thea 201</a> , <a href="#">202</a> .   |

**General Education II**

| REQUIREMENT              | HOURS | DESCRIPTION   |
|--------------------------|-------|---|
| <a href="#">Math 261</a> | 3     | Complete <a href="#">Math 261</a> with a passing grade. |
| <a href="#">Math 262</a> | 3     | Complete <a href="#">Math 262</a> with a passing grade. |
| <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="#">Phys 211</a> | 3     | Complete <a href="#">Phys 211</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="#">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 116</a> | 1     | Complete <a href="#">Chem 116</a> with a passing grade. |

**Major Requirements**

| REQUIREMENT              | HOURS | DESCRIPTION   |
|--------------------------|-------|---|
| <a href="#">Ch E 252</a> | 3     | Complete <a href="#">Ch E 252</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="#">Ch E 316</a> | 3     | Complete <a href="#">Ch E 316</a> with a passing grade. |
| <a href="#">Ch E 318</a> | 3     | Complete <a href="#">Ch E 318</a> with a passing grade. |



| REQUIREMENT                | HOURS | DESCRIPTION   |
|----------------------------|-------|---|
| <a href="#">Ch E 345</a>   | 3     | Complete <a href="#">Ch E 345</a> with a passing grade. |
| <a href="#">Ch E 411</a>   | 1     | Complete <a href="#">Ch E 411</a> with a passing grade. |
| <a href="#">Ch E 412</a>   | 3     | Complete <a href="#">Ch E 412</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 423</a>   | 3     | Complete <a href="#">Ch E 423</a> with a passing grade. |
| <a href="#">Ch E 431</a>   | 1     | Complete <a href="#">Ch E 431</a> with a passing grade. |
| <a href="#">Ch E 432</a>   | 1     | Complete <a href="#">Ch E 432</a> with a passing grade. |
| <a href="#">Ch E 433</a>   | 2     | Complete <a href="#">Ch E 433</a> with a passing grade. |
| <a href="#">Ch E 449</a>   | 3     | Complete <a href="#">Ch E 449</a> with a passing grade. |
| <a href="#">Ch E 450</a>   | 1     | Complete <a href="#">CH E 450</a> with a passing grade. |
| <a href="#">Ch E 452</a>   | 3     | Complete <a href="#">Ch E 452</a> with a passing grade. |
| Enroll in a BSChE emphasis |       | Enroll in an emphasis in BSChE program.                 |
| School of Engineering GPA  |       | Must be at least a 2.0                                  |

### Major Requirements II

| REQUIREMENT                    | HOURS | DESCRIPTION   |
|--------------------------------|-------|---|
| <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="#">Engr 101</a> & 111 | 3     | Complete <a href="#">Engr 101</a> and <a href="#">111</a> with a passing grade. |
| <a href="#">Engr 310</a>       | 3     | Complete <a href="#">Engr 310</a> with a passing grade.                         |
| <a href="#">Engr 313</a>       | 3     | Complete <a href="#">Engr 313</a> with a passing grade.                         |
| <a href="#">Engr 321</a>       | 3     | Complete <a href="#">Engr 321</a> with a passing grade.                         |
| <a href="#">CSci 256</a>       | 3     | Complete <a href="#">CSci 256</a> with a passing grade.                         |

### Emphasis - Manufacturing

| REQUIREMENT              | HOURS | DESCRIPTION   |
|--------------------------|-------|---|
| 3 hrs of Adv Science     | 3     | Complete at least 3 hrs of Advanced Science with a passing grade chosen from: <a href="#">Engr 340</a> , <a href="#">540</a> , <a href="#">CH E 543</a> , <a href="#">545</a> , <a href="#">547</a> , <a href="#">GEOL 314</a> , <a href="#">G E 415</a> , <a href="#">450</a> , <a href="#">503</a> , <a href="#">CHEM 314</a> , <a href="#">331</a> , <a href="#">332</a> , <a href="#">334</a> , <a href="#">373</a> , <a href="#">401</a> , <a href="#">471</a> , <a href="#">473</a> , <a href="#">PHYS 315</a> , <a href="#">317</a> , <a href="#">318</a> , <a href="#">319</a> , <a href="#">321</a> , <a href="#">401</a> , <a href="#">402</a> BISC <a href="#">301</a> , <a href="#">306</a> , <a href="#">318</a> , <a href="#">320</a> , <a href="#">327</a> , <a href="#">333</a> , <a href="#">335</a> . |
| <a href="#">Manf 150</a> | 1     | Complete <a href="#">Manf 150</a> with a passing grade.   |
| <a href="#">Manf 152</a> | 1     | Complete <a href="#">Manf 152</a> with a passing grade.   |
| <a href="#">Manf 251</a> | 3     | Complete <a href="#">Manf 251</a> with a passing grade.   |
| <a href="#">Manf 252</a> | 1     | Complete <a href="#">Manf 252</a> with a passing grade.   |
| <a href="#">Manf 255</a> | 1     | Complete <a href="#">Manf 255</a> with a passing grade.   |
| <a href="#">Manf 325</a> | 3     | Complete <a href="#">Manf 325</a> with a passing grade.   |
| <a href="#">Manf 351</a> | 1     | Complete <a href="#">Manf 351</a> with a passing grade.   |
| <a href="#">Manf 353</a> | 3     | Complete <a href="#">Manf 353</a> with a passing grade.   |
| <a href="#">Manf 355</a> | 1     | Complete <a href="#">Manf 355</a> with a passing grade.   |
| <a href="#">Manf 455</a> | 3     | Complete <a href="#">Manf 455</a> with a passing grade.   |

