Standard Option

- B.S.Ch.E. in Chemical Engineering
- Standard Option
- Degree Requirements

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 will be: 1. Globally competitive in the professional world; 2. Prepared for leadership and success in their chosen career or in continued education; 3. Equipped with flexible problem-solving skills to address complex professional and societal issues.

Student Outcomes

In accordance with ABET accreditation requirements, BSChE students at the University of Mississippi should demonstrate the attainment 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 standard option in chemical engineering are as follows: Writ 101 and 102; Math 261, 262, 263, 264, and 353; Chem 105, 106, 115, 116, 221, and 225; Phys 211, 212, 221, 222; an advanced science (defined below); Engr 310, 313, 321, and 322; Ch E 101, 251, 307, 308, 317, 345, 411, 412, 417, 421, 423, 445, 446, 451, and 452; an engineering elective (defined below); 12 hours of technical electives of 300 or higher course number from engineering, science, or mathematics; and 3 hours of fine arts, 6 hours of humanities from the same department, 6 hours of social science from the same department, and 3 additional hours of humanities, social science, or a general education course as defined by the School of Engineering with the exception that speech and math content courses may not be used to satisfy any of these required 18 credits. Any of the following will satisfy the advanced science requirement: Engr 340, Engr 540, Ch E 543, Ch E 545, Ch E 547, Geol 314, Geol 415, Geol 450, G E 503, Chem 314, Chem 331, Chem 332, Chem 334, Chem 373, Chem 401, Chem 471, Chem 473, Phys 315, Phys 317, Phys 318, Phys 319, Phys 321, Phys 401, Phys 402, Bisc 301, Bisc 306, Bisc 318, Bisc 320, Bisc 327, or Bisc 335. Any of the following will satisfy the engineering elective requirement: Engr 309, Engr 330, Engr 340, Engr 360, Engr 573, C E 471, C E 472, or M E 534.

The following alternative courses may satisfy course requirements as specified:

- Alternatives to Ch E 101: Ch E 103 and Che E 104, or Engr 100
- Alternative to Engr 313: The combination of Manf 251 and Manf 252
- 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.

Emphases in Chemical Engineering

As alternative to the standard or pre-med options in chemical engineering, a student may choose to obtain a B.S. in Chemical Engineering with one or more of the following four emphases: biotechnology, environmental, manufacturing (in collaboration with the Center for Manufacturing Excellence), and materials. The same general education and course requirements (defined above) apply to all emphases in chemical engineering. Taking specific advanced chemistry and elective courses satisfy specific emphasis 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.

Standard Option

Course Requirements

Standard	Credit hours
Any approved advanced science	3 Credit Hours
Any approved engineering elective	3 Credit Hours
300 level or higher technical electives	12 Credit Hours
Add'l hum/soc sci/gen ed	3 Credit Hours

No more than 3 credits of undergraduate research can be used to fulfill the technical elective requirements.

The University of Mississippi is accredited by the Southern Association of Colleges and Schools Commission on Colleges to award certificates and baccalaureate, master's, specialist, and doctoral degrees. Contact the Commission on Colleges at 1866 Southern Lane, Decatur, Georgia 30033-4097, call 404-679-4500, or visit online at www.sacscoc.org for questions about the accreditation.

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 Hon 101, Writ 100 or Writ 101 with a passing grade.
First Year Writing II	3	Complete Hon 102, Liba 102, or Writ 102 with a passing grade.
Chem 105	3	Complete Chem 105 with a passing grade.
Chem 106	3	Complete Chem 106 with a passing grade.
Chem 115	1	Complete Chem 115 with a passing grade.
Chem 116	1	Complete Chem 116 with a passing grade.
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	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.
Serial humanities	6	Complete 6 hrs (from the same department) of humanities choosing from course work in classics, literature, history, philosophy, religion, Southern Studies, African American Studies, and Gender Studies.
Serial social science	6	Complete 6 hours (from the same department) of social sciences choosing from the following; economics, anthropology, political science, psychology, and sociology.Psy 202 and Econ 230 are excluded from these options.

Major Requirements

REQUIREMENT	HOURS	DESCRIPTION
Ch E 101 or 103/104 or Engr 100	2	Complete Ch E 101 or Ch E 103/104 or Engr 100 with a passing grade.
Ch E 251	3	Complete Ch E 251 with a passing grade.
Ch E 307	2	Complete Ch E 307 with a passing grade.
Ch E 308	2	Complete Ch E 308 with a passing grade.
Ch E 317	3	Complete Ch E 317 with a passing grade.
Ch E 345	3	Complete Ch E 345 with a passing grade.
Ch E 411	1	Complete Ch E 411 with a passing grade.
Ch E 412	3	Complete Ch E 412 with a passing grade.
Ch E 417	3	Complete Ch E 417 with a passing grade.
Ch E 421	3	Complete Ch E 421 with a passing grade.
Ch E 423	3	Complete Ch E 423 with a passing grade.
Ch E 445	2	Complete Ch E 445 with a passing grade.
Ch E 446	2	Complete Ch E 446 with a passing grade.

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REQUIREMENT	HOURS	DESCRIPTION
Ch E 451	4	Complete Ch E 451 with a passing grade.
Ch E 452	3	Complete Ch E 452 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
Chem 225	1	Complete Chem 225 with a passing grade.
Chem 221	3	Complete Chem 221 with a passing grade.
Engr 310	3	Complete Engr 310 with a passing grade.
Engr 313 or Manf 251/252	3	Complete Engr 313 or Manf 251/252 with a passing grade.
Engr 321	3	Complete Engr 321 with a passing grade.
Engr 322	3	Complete Engr 322 with a passing grade.

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REQUIREMENT	HOURS	DESCRIPTION
3 hrs Engineering elective	3	Complete one of the following engineering technical electives: Engr 309, Engr 330, Engr 340, Engr 360, Engr 573, C E 471,C E 472, or M E 534.
12 hrs technical electives	12	Complete at least 12 credit hours of technical electives to include three 3-hour electives of 300 or higher course number from among engineering, science, or mathematics.
3 hrs Adv science course	3	Complete at least one advanced science course. Course can be chosen from Bisc 301, Bisc 306, Bisc 318, Bisc 320, Bisc 327, Bisc 333, Bisc 335, Ch E 543, Ch E 545, Ch E 547, Chem 314, Chem 331, Chem 332, Chem 334, Chem 373, Chem 401, Chem 471, Chem 473, Engr 340, Engr 540, G E 415, G E 450, G E 503, Geol 314, Phys 315, Phys 317, Phys 318, Phys 319, Phys 321, Phys 401, Phys 402,
3 hrs add'l hum/soc sci/gen ed	3	Complete an additional 3 credit hours in humanities, social sciences or approved general education courses with a passing grade.

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