B.S.Ch.E. in Chemical Engineering

**Overview**

**Degree Requirements**

**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**

**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;
- an engineering elective (defined below);
- 12 hours of technical electives of 300 or higher course number from engineering, science, or mathematics;
- 3 hours of fine arts
- 6 hours of humanities from the same department
- 6 hours of social science from the same department
- 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, 540
- Ch E 543, 545, 547
- Geol 314,
- G E 415, 450, 503
- Chem 314, 331, 332, 334, 373, 401, 471, 473
- Phys 315, 317, 318, 319, 321, 401, 402
- Bisc 301, 306, 318, 320, 327, 333, 335

Any of the following will satisfy the engineering elective requirement:

- Engr 309, 330, 340, 360, 573
- C E 471, 472
- Ch E 535, 540, 550
- M E 534

The following alternative courses may satisfy course requirements as specified:

- Alternatives to Ch E 101: Ch E 103 and Ch E 104, or Engr 100
- 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.

**Specializations**

- Emphasis - Biotechnology
- Emphasis - Environmental
- Emphasis - Manufacturing
- Emphasis - Materials
- Pre-Med Option
- Standard Option