

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

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## 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

Graduates of the chemical engineering program can:

1. Apply basic principles of math, science, and engineering, and particularly of advanced chemistry, to identify, analyze, formulate, and solve a wide variety of engineering problems;
2. Apply the core chemical engineering content (material and energy balances, thermodynamics, transport phenomena, separations and chemical reaction engineering) to analysis, problem solving, and design;
3. Analyze and design safe and economic process systems using skills and tools appropriate at any phase, from synthesis through optimization and control to operability;
4. Design and conduct experiments, and analyze and interpret technical data using modern experimental and computational techniques and tools;
5. Communicate technical information through effective presentations, memoranda and reports;
6. Contribute to the success of multidisciplinary teams characteristic of today's workplace;
7. Understand the professional and ethical responsibility of the engineer, the safety and environmental aspects of engineering decisions, and the impact of engineering solutions in the context of societal needs and contemporary issues;
8. Continue their education and pursue new concepts through self-directed study.

## General Education Requirements

In addition to the courses specified by the School of Engineering general education requirements, the following are required: Math 263-264 and Math 353; laboratory science to be fulfilled by Chem 105, 106, 115, 116 and Phys 211, 212, 221, 222. Students must also complete 18 hours of humanities/social sciences/fine arts to include 3 hours of fine arts, 6 hours of sequential work in the humanities, 6 hours of sequential work in the social sciences, and 3 additional hours of advanced course work in the area selected for the humanities or social sciences. Courses in the categories of humanities/social science/fine arts acceptable for these 18 hours of credit are specified under the general education requirements for the School of Engineering. Speech courses may not be used to satisfy any of these required 18 credits.

## Course Requirements

Specific requirements for the B.S. in chemical engineering are as follows: Chem 221, 222, 225, 331; CSci 251; Engr 309, 310, 313, 321, 322, 362; Ch E 103, 104, 307, 308, 317, 345, 411, 417, 421, 423, 445, 446, 451, 452, 511; technical electives to include two 3-hour electives from among engineering, science, or mathematics.

## 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.

