Bachelor of Science in Chemical Engineering (B.S.Ch.E.)
Department of Chemical & Biological Engineering
Catalog Year: 2015-2016

Credit hours required for graduation: 124

### Fall Semester
**Freshman Year**
- **Chemical Engineering Laboratory I**
- **General Chemistry I**

**Spring Semester**
- **Organic Chemistry**
- **Calculus I**

### Sophomore Year
**Fall Semester**
- **Chemical Process Calculations**
- **Organic Chemistry**

**Spring Semester**
- **Chemical Engineering Thermodynamics**
- **Introductory Macroeconomics**

### Junior Year
**Fall Semester**
- **Introduction to Transport Phenomena**
- **Numerical Methods for Chemical and Biological Engineering**

**Spring Semester**
- **Unit Operations**
- **Mass Transfer**

### Senior Year
**Fall Semester**
- **Chemical Engineering Laboratory III**
- **Process Dynamic and Control**

**Spring Semester**
- **Chemical Engineering Laboratory IV**
- **Senior Seminar**

---

(1) Only courses with grades of "C-" or better may be applied toward the B.S.Ch.E. Courses with this footnote are prerequisites for other classes, and must be taken in the sequence listed. CBE classes are generally only offered in the semester listed, hence skipping a core CBE class could delay graduation by one year. Students are encouraged to sign up for independent study, CBE 491/492 which provide academic credit for doing research under the supervision of a CBE faculty member.

(2) Students must file an application for the B.S.Ch.E. degree prior to the completion of 95 credit hours of applicable courses.

(3) Students should consult with advisors to obtain a list of acceptable core humanities, social/behavioral science, fine arts and second language electives. These courses may be taken whenever convenient. Grade must be "C" or better.

(4) ECON 105 may be taken in either the sophomore or junior year.

(5) A minimum of 9 credit hours of advanced chemistry and/or biology courses. CHEM 312 is required for all concentrations. For the other classes, select from among CHEM 302, 311, 312L, 410, 431; Chemistry and Physics at the Nanoscale; BIOL 201; or other approved courses, depending upon the student’s area of concentration. The courses chosen must represent a logical sequence of courses for the concentration and must be approved by an academic advisor.

(6) Technical electives are chosen from upper-division courses approved by the chemical engineering program advisors. A list of approved technical electives is available on the Department Web site. One of these electives must be a class taught from within the School of Engineering, and the other elective may be taught from within either the School of Engineering or the College of Arts and Sciences. The department requires that these courses be part of an approved concentration. The chairperson may allow up to 6 credit hours of technical electives for students taking required ROTC courses in aerospace or naval science. One technical elective can be replaced by a research project done under the supervision of a CBE faculty member and requires advance approval by the undergraduate advisor.

(7) Students are encouraged to take the Fundamentals of Engineering (FE) Examination during their senior year. This is the first formal step toward professional registration.