

## Minor in Biochemical Engineering

Revised: 2008-04-25

A minor in biochemical engineering is open to all students in the University with prerequisite calculus, chemistry, and biology courses. The minor is particularly designed for majors in chemical engineering, biology, chemistry, or health science fields. Students are required to take the courses listed below which includes an interdisciplinary biochemical engineering (capstone) design project. Course work from chemistry and biology is combined with chemical engineering courses as related to biochemical engineering.

For chemical engineering majors, the additional coursework for the biochemical engineering minor are 3 required biology courses (BIOU111/2, BIOU301/2, BIOU323; see \* below) and 1 required chemical engineering elective (CHEU630; see \* below). These 4 courses substitute for 3 of the 4 available general electives and for the 1 available chemical engineering elective in the chemical engineering curriculum.

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### Courses required outside of Chemical Engineering

MTHU141 or U241	Calculus 1	4 SH
MTHU142 or U242	Calculus 2	4 SH
MTHU343 or U345	Differential Equations	4 SH
CHMU311/2	Organic Chemistry 1	5 SH
CHMU313/4	Organic Chemistry 2	5 SH
*BIOU111/2	General Biology 1 / Lab	5 SH
*BIOU301/2	Genetics and Molecular Biology / Lab	5 SH
*BIOU323	Biochemistry / Lab	5 SH

Biochemical Engineering Minors have a received a waiver on the prerequisite for BIO U301 of BIO U103/4.

### Required Chemical Engineering Courses

CHEU306/7	Chemical Engineering Calculations	5 SH
CHEU310	Chemical Engineering Transport Processes & Operations 1	4 SH
CHEU312	Chemical Engineering Transport Processes & Operations 2	4 SH
*CHEU630	Biochemical Engineering Fundamentals	4 SH
CHEU703/4	Capstone Design 2 (or BIO U701 Biology Capstone coordinated with chemical engineering faculty)	5 SH

Notes:

- Minor is awarded to students completing the requirements and earning a minimum GPA of 2.0 in their minor coursework.
- Students must file a petition with the CHE Academic Advisor prior to taking any coursework.
- Students should schedule a meeting with the CHE Academic Advisor prior to graduation, to be cleared for the minor.
- The course requirements include CHEU703/4 as an interdisciplinary (capstone) design project. This capstone design requirement may be filled through the non-chemical engineering student's major capstone design in coordination with chemical engineering faculty. For example, if a non-chemical engineering student has a major discipline capstone design requirement (like BIOU701 Biology Capstone Design), then he/she will sign up for the capstone design in his/her discipline and participate in the interdisciplinary capstone design project coordinated with chemical engineering faculty.
- A student will be given credit toward the minor coursework for a course already taken that has substantial overlap with any CHE course. For example, if a student has taken MIMU475 Fluid Mechanics, he/she will be given credit for CHEU320 Chemical Engineering Transport Processes and Operations 1. A petition should be filed with the CHE Academic Advisor to request such a course waiver.