# CHEMICAL & BIOMOLECULAR ENGINEERING

## CORE GENERAL EDUCATION PROGRAM

### Fundamental Studies (6 credits)
- Academic Writing - ENGL 101  
  Technical Writing - ENGL 393  

### Distributive Studies (18 credits)
#### Lower level courses
- Humanities and the Arts (9 credits)
  - Literature (HL)  
  - Arts (HA)  
  - Other Humanities (HA, HL, HO, IE)

#### Social and Behavioral Sciences (9 credits)
- Social/Political History (SH)  
- Behavior/Social Science (SB)  
- Behavior/Social Science (SB, IE)

*Only one Interdisciplinary & Emerging Issues (IE) course can be taken in place of a third humanities or behavior/social science course.

### Advanced Studies (6 credits)
- Must be courses outside of your major department or may include an approved Capstone course in your major
- BCHM 461 – Biochem I or BCHM 463  
- CHBE 446 – Process Eng Econ & Design II

*CORE Approved Capstone Course.

### Diversity (3 credits)
- One course from approved list (D)

### MAJOR REQUIREMENTS

#### Basic Sciences
- CHEM 135 - Chem for Eng  
- CHEM 136 - Chemistry Lab for Eng  
- CHEM 231 & 232 - Organic Chemistry I & Lab  
- CHEM 241 & 242 - Organic Chemistry II & Lab  
- PHYS 161 - General Physics I  
- PHYS 260 & 261 - Gen Physics II & Lab  
- PHYS 270 & 271 - Gen Physics III & Lab  
- MATH 140 - Calculus I  
- MATH 141 - Calculus II  
- MATH 241 - Calculus III  
- MATH 246 - Differential Equations

#### Engineering Sciences
- ENES 100 - Intro to Eng Design

### Major Requirements
- BIOE 120 - Biology for Engineers  
- CHBE 101 – Intro to Chem & Biomolec Eng  
- CHBE 250 - Comp Methods in Chem & Biomolec Eng  
- CHBE 301 – Chem & Biomolec Thermodynamics I  
- CHBE 302 - Chem & Biomolec Thermodynamics II  
- CHBE 333 – Comm Skills for Eng  
- CHBE 410 – Statistics & Experimental Design  
- CHBE 422 - Chem & Biomolec Transport Phenomena I  
- CHBE 424 - Chem & Biomolec Transport Phenomena II  
- CHBE 426 - Chem & Biomolec Separation Processes  
- CHBE 437 - Chem & Biomolec Eng Lab  
- CHBE 440 - Chem Kinetics & Reactor Design  
- CHBE 442 - Chem Eng Systems Analysis  
- CHBE 444 - Process Eng Econ & Design I  
- CHBE 446 - Process Eng Econ & Design II  
- ENMA 300 - Intro to Mat & Apps or ENMA425 or BIOE453  
- CHBE 4XX - Elective  
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### Technical Requirements
- BCHM 461/462 or BCHM 463  
- CHEM 272 – Gen Bioanalytical Chem Lab

### NOTES

- All engineering and technical courses must be completed with a grade of 2.0 or better.
- All degree courses must be taken for a regular grade.
- A minimum of 120 credits and completion of all degree requirements is required for graduation.
- The responsibility for meeting all graduation requirements rests with the student.
- Track your degree progress using Degree Navigator

2011-2012

Benchmark Direct Int. Ext.