

B.S. in Chemical Engineering

Four-Year Plan

Catalog Year 2013-2014

Below is the *advised sequence* of courses for this degree program.
The official degree requirements can be found in the University General Catalog.

| Course Number and Title | Units | Prerequisites |
|-----------------------------------------------------------------|-------|--------------------------------------------------------------|
| 1ST SEMESTER | | |
| MATH 122A/B or MATH 125 Calculus I with Applications | 5/3 | Appropriate Math Placement |
| CHEM 151 General Chemistry I | 4 | |
| ENGL 101 First-Year Composition | 3 | |
| ENGR 102 Introduction to Engineering | 3 | Completion or Concurrent enrollment MATH 122B or MATH 125 |
| Tier I General Education | 3 | |
| 2ND SEMESTER | | |
| MATH 129 Calculus II | 3 | MATH 122B or 125 with C or better |
| CHEM 152 General Chemistry II | 4 | CHEM 151 |
| ECE 175 Computer Programming for Engineering Applications | 3 | Concurrent enrollment MATH 122B or MATH 125 |
| ENGL 102 First-Year Composition | 3 | ENGL 101 |
| Tier I General Education | 3 | |
| 3RD SEMESTER | | |
| CHEE 201 Elements of Chemical Engineering I | 3 | MATH 122B or MATH 125; ECE 175; CHEM 152; |
| CHEE 201L Elements of Chemical Engineering I- Computational Lab | 1 | ECE 175; MATH 122B or MATH 125 |
| MATH 223 Vector Calculus | 4 | MATH 129 with C or better |
| PHYS 141 Introductory Mechanics | 4 | MATH 122B or MATH 125; Concurrent enrollment MATH 129 |
| CHEM 241A Lectures in Organic Chemistry | 3 | CHEM 152 |
| CHEM 243A Organic Chemistry Laboratory | 1 | Completion or concurrent enrollment CHEM 241A |
| 4TH SEMESTER | | |
| CHEE 202 Elements of Chemical Engineering II | 4 | CHEE 201, MATH 223 |
| CHEE 203 Chemical Engineering Heat Transfer and Fluid Flow | 3 | CHEE 201, PHYS 241 |
| MATH 254 Intro to Ordinary Differential Equations | 3 | MATH 129 with C or better |
| PHYS 241 Introductory Electricity and Magnetism | 4 | PHYS 141 |
| CHEM 241B Lectures in Organic Chemistry | 5 | CHEM 241A |

| Course Number and Title | Units | Prerequisites |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|------------------------------------------------------------------|
| Advanced Standing is required for 3xx and 4xx courses (See advisor for requirements) | | |
| 5TH SEMESTER | | |
| CHEE 303 Chemical Engineering Mass Transfer | 3 | CHEE 203 |
| CHEE 402 Chemical Engineering Modeling | 3 | MATH 254; CHEE 202; Corequisite: CHEE 303 |
| CHEE 301A Chemical Engineering Lab I | 1 | CHEE 202; CHEE 203; MATH 254; Corequisite: CHEE 303, CHEE 402 |
| CHEE 477R Microbiology for Engineers or BIOC 462A Biochemistry | 3 | |
| CHEM 480A Physical Chemistry | 3 | CHEM 151; MATH 129; Completion or concurrent enrollment PHYS 241 |
| Tier I General Education | 3 | |
| 6TH SEMESTER | | |
| CHEE 305 Chemical Engineering Transport Phenomena | 3 | CHEE 303; CHEE 402 |
| CHEE 326 Chemical and Physical Equilibrium | 3 | CHEE 480A; CHEE 201 |
| CHEE 301B Chemical Engineering Lab II | 1 | CHEE 303; Concurrent Enrollment: CHEE 305; CHEE 326 |
| Technical Requirement | 3 | |
| Advance Science Requirement: CHEM 480B Physical Chemistry or CHEM 481 Biophysical Chemistry or BIOC 462B Biochemistry or BME 510 Biology for BME or BME 511 Physiology for BME | 3 | For CHEM 480B and CHEM 481: CHEM 480A. For BIOC 462B: BIOC 462A |
| Tier I General Education | 3 | |
| 7TH SEMESTER | | |
| CHEE 420 Chemical Reaction Engineering | 3 | CHEE 326 |
| CHEE 442 Chemical Engineering Design Principles | 3 | CHEE 303; CHEE 326; concurrent enrollment CHEE 420 |
| CHEE 401A Chemical & Environmental Engineering Laboratory I | 1 | CHEE 420 |
| ENGR Elective | 3 | |
| Technical Elective | 3 | |
| Tier II General Education | 3 | |
| 8TH SEMESTER | | |
| CHEE 413 Process Control and Simulation | 3 | CHEE 402 |
| CHEE 443 Chemical Engineering Plant Design | 3 | CHEE 420; CHEE 442 |
| ENGR Elective | 3 | |
| Technical Elective | 3 | |
| Tier II General Education | 3 | |

*Tier I and II General Education Courses must meet University general education requirements. One course must be recognized by the university as meeting the Diversity Requirement.