

# 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
<b>1<sup>ST</sup> SEMESTER</b>		
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	
<b>2<sup>ND</sup> SEMESTER</b>		
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	
<b>3<sup>RD</sup> SEMESTER</b>		
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
<b>4<sup>TH</sup> SEMESTER</b>		
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
<b>Advanced Standing is required for 3xx and 4xx courses (See advisor for requirements)</b>		
<b>5<sup>TH</sup> SEMESTER</b>		
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	
<b>6<sup>TH</sup> SEMESTER</b>		
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	
<b>7<sup>TH</sup> SEMESTER</b>		
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	
<b>8<sup>TH</sup> SEMESTER</b>		
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.**