### Current DEGREE: BACHELOR OF CHEMICAL ENGINEERING

#### MAJOR: CHEMICAL ENGINEERING

**CURRICULUM**

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<td>Critical Reading and Writing (minimum grade C-)</td>
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#### MAJOR REQUIREMENTS

Breadth Requirements 21

The College of Engineering requires 21 total credits, which includes 9 additional credits above and beyond the 12 University Breadth Requirement credits. Coursework may include courses from the University Breadth Requirement list and the College of Engineering Supplemental Course list. See College of Engineering Breadth Requirements for a detailed description. For timely progress toward degree completion, 3 credits must satisfy the University Multicultural Requirement. All courses must be passed with a minimum grade of C-. Additionally, three of the Breadth Requirement courses (minimum of nine credits) must be in the same department or program, and at least one of these three courses must be above the introductory level. Courses classified as Mathematics, Natural Sciences, and Technology in the University Breadth Requirement list may not be used to fulfill this requirement.

 Superior figures indicate year (1 = freshman, 2 = sophomore, 3 = junior, 4 = senior) and semester (F = fall, S = spring) in which the course should be taken.

**Core Courses**

- CHEG 112 Introduction to Chemical Engineering 3
- CHEG 231 Chemical Engineering Thermodynamics 3
- CHEG 320 Engineering Economics and Risk Assessment 3
- CHEG 325 Chemical Engineering Thermodynamics 3
- CHEG 332 Chemical Engineering Kinetics 3
- CHEG 341 Fluid Mechanics 3
- CHEG 342 Heat and Mass Transfer 3
- CHEG 345 Chemical Engineering Laboratory I 3
- CHEG 401 Chemical Process Dynamics and Control 3
- CHEG 432 Chemical Process Analysis (DLE) 3
- CHEG 443 Chemical Engineering Laboratory II 3
- CHEM 111 General Chemistry 3
- CHEM 112 General Chemistry 3
- CHEM 220 Quantitative Analysis 3
- CHEM 221 Quantitative Analysis Laboratory 1
- CHEM 311 Organic Chemistry 3
- CHEM 312 Organic Chemistry 3
- CHEM 313 Introductory Biochemistry 1
- CHEM 333 Organic Chemistry Laboratory I (lecture only) 1
- CHEM 441 Physical Chemistry 3
- CHEM 445 Physical Chemistry Laboratory I 1

The student has the option of taking two credits of CHEM 333 Organic Chemistry Laboratory (laboratory and lecture) and not taking CHEM 445 Physical Chemistry Lab I.

**Technical Electives**

- CISC 106 General Computer Science for Engineers 3
- EGGG 101 Introduction to Engineering (FYE) 2
- MATH 242 Analytic Geometry and Calculus B 4
- MATH 243 Analytic Geometry and Calculus C 4
- MATH 305/CHEG 305 Applied Mathematics for Chemical Engineering 3
- MSEG 302 Materials Science for Engineers 3
- PHYS 207 Fundamentals of Physics I 4
- PHYS 208 Fundamentals of Physics II 4

### Revised DEGREE: BACHELOR OF CHEMICAL ENGINEERING

#### MAJOR: CHEMICAL ENGINEERING

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#### MAJOR REQUIREMENTS

College Breadth Requirements

The College of Engineering requires 21 total breadth credits, which includes 9 additional credits above and beyond the 12 University Breadth Requirement credits. The College Breadth selections may include courses from the University Breadth Requirement list and/or the College of Engineering Supplemental Course list. See College of Engineering Breadth Requirements for a detailed description. For timely progress toward degree completion, 3 credits must satisfy the University Multicultural Requirement. All courses must be passed with a minimum grade of C-. Additionally, three of the Breadth Requirement courses (minimum of nine credits) must be in the same department or program, and at least one of these three courses must be above the introductory level. Courses classified as Mathematics, Natural Sciences, and Technology in the University Breadth Requirement list may not be used to fulfill this requirement.

 Superior figures indicate year (1 = freshman, 2 = sophomore, 3 = junior, 4 = senior) and semester (F = fall, S = spring) in which the course should be taken.

**Core Courses**

- CHEG 112 Introduction to Chemical Engineering
- CHEG 231 Chemical Engineering Thermodynamics
- CHEG 320 Engineering Economics and Risk Assessment
- CHEG 325 Chemical Engineering Thermodynamics
- CHEG 332 Chemical Engineering Kinetics
- CHEG 341 Fluid Mechanics
- CHEG 342 Heat and Mass Transfer
- CHEG 345 Chemical Engineering Laboratory I
- CHEG 401 Chemical Process Dynamics and Control
- CHEG 432 Chemical Process Analysis (DLE)
- CHEG 443 Chemical Engineering Laboratory II
- CHEM 111 General Chemistry
- CHEM 112 General Chemistry
- CHEM 220 Quantitative Analysis
- CHEM 221 Quantitative Analysis Laboratory
- CHEM 331 Organic Chemistry
- CHEM 332 Organic Chemistry
- CHEM 313 Introductory Biochemistry
- CHEM 333 Organic Chemistry Laboratory I (lecture only)
- CHEM 441 Physical Chemistry
- CHEM 445 Physical Chemistry Laboratory I

The student has the option of taking two credits of CHEM 333 Organic Chemistry Laboratory (laboratory and lecture) and not taking CHEM 445 Physical Chemistry Lab I.

**Technical Electives**

- CISC 106 General Computer Science for Engineers
- EGGG 101 Introduction to Engineering (FYE)
- MATH 242 Analytic Geometry and Calculus B
- MATH 243 Analytic Geometry and Calculus C
- MATH 305/CHEG 305 Applied Mathematics for Chemical Engineering
- MSEG 302 Materials Science for Engineers
- PHYS 207 Fundamentals of Physics I
- PHYS 208 Fundamentals of Physics II
The student must take four General Technical Electives (12 credits) and three Chemical Engineering Electives (9 credits) OR, upon approval by her/his academic advisor, take three General Technical Electives (9 credits) and four Chemical Engineering Electives (12 credits). In either case the student must complete a minimum of 21 credits of General Technical and Chemical Engineering Elective courses.

General Technical Electives

The purpose of the technical electives is to advance the scientific or engineering background of the chemical engineers. The technical electives program consists of a minimum of twelve credits taken from the College of Engineering and the College of Arts and Sciences (see below). At least three of these courses (nine credits) must be at the intermediate level (generally 300-600). Students should select their technical electives in the spring of sophomore year to avoid scheduling conflicts. Students should formulate an academic plan for their technical and Chemical Engineering electives with the assistance of their academic advisor.

The technical elective program is under constant review by the faculty. An updated list is available in the department office, and a formal mechanism exists to make substitutions coupled with the Chemical Engineering Technical Electives to obtain a technical concentration.

Chemical Engineering Electives

The curriculum provides three Chemical Engineering Electives in the senior year. In addition, the student can exchange one of the General Technical Electives provided in the senior year for a Chemical Engineering Elective after consultation with the academic advisor. These courses are intended to provide some flexibility in selecting a Chemical Engineering program at the advanced level. Students should decide with the assistance of their advisor if they should conduct a program of independent research and then choose their course elective(s). Chemical Engineering Electives are defined as follows: any Chemical Engineering course numbered 466 to 474, UNIV 401/UNIV 402 Senior Thesis (directed by a Chemical Engineering faculty); any 600- or 800-level course in Chemical Engineering. Courses at the 600 and 800-level are graduate courses open, with the consent of the instructor, to students with senior standing.

The student must take four General Technical Electives (12 credits) and three Chemical Engineering Electives (9 credits) OR, upon approval by her/his academic advisor, take three General Technical Electives (9 credits) and four Chemical Engineering Electives (12 credits). In either case the student must complete a minimum of 21 credits of General Technical and Chemical Engineering Elective courses.

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