Chemical Engineering, BSE

Academic Plans

Sample Plan of Study

Sample plans represent one way to complete a program of study. Actual course selection and sequence will vary and should be discussed with an academic advisor. For additional sample plans, see MyUI.

Chemical Engineering, BSE

Course	Title	Hours
First Year		
Fall		
RHET:1030	Rhetoric: Writing and Communication [a]	4
MATH:1550	Engineering Calculus I [b, c]	4
CHEM:1110	Principles of Chemistry I [b, d]	4
ENGR:1100	Introduction to Engineering Problem Solving [e]	3
CSI:1600	Success at Iowa	0
	Hours	**15**
Spring		
MATH:1560	Engineering Calculus II [b]	4
MATH:2550	Engineering Matrix Algebra [b]	2
CHEM:1120	Principles of Chemistry II [b]	4
PHYS:1611	Introductory Physics I [b]	4
ENGR:1300	Introduction to Engineering Computing [b]	3
CBE:1000	CBE Departmental Seminar [f]	1
	Hours	**18**
Second Year		
Fall		
GE: Approved Course Subjects [g]		3
MATH:2560	Engineering Differential Equations [b]	3
CHEM:2210 or CHEM:2230	Organic Chemistry I [h] or Organic Chemistry I for Majors	3
ENGR:2130	Thermodynamics [a]	3
CBE:2110	Computational Tools for Chemical Engineers [e]	2
CBE:2105	Material and Energy Balances [b]	3
	Hours	**17**
Spring		
GE: Cultural Perspectives, Values, and Society [i]		3
STAT:2020 or STAT:3510 or CBE:3020	Probability and Statistics for the Engineering and Physical Sciences [j] or Biostatistics or Applied Statistics for Chemical and Natural Resources Engineering	3
CHEM:2220 or CHEM:2240	Organic Chemistry II [k] or Organic Chemistry II for Majors	3
CHEM:2410 or CHEM:2420	Organic Chemistry Laboratory [l] or Organic Chemistry Laboratory for Majors	3
CBE:3105	Chemical Engineering Thermodynamics [f]	3
CBE:3109	Fluid Flow [f]	2
CBE:3000	Professional Seminar: Chemical Engineering [b]	1
Focus Area Form: Students should fill out a focus area selection form by the end of their Spring semester. Focus area forms can be updated/ changed at anytime. Please see the Chemical Engineering - Undergraduate Program, Resources and Forms webpage for the link.		
	Hours	**18**
Third Year		
Fall		
ENGR:2720	Materials Science [a]	3
CBE:3113	Heat and Mass Transfer [e]	3
CBE:3125	Chemical Process Safety [e]	3
CBE:3117	Separations [e]	3
CBE:3000	Professional Seminar: Chemical Engineering [b]	1
Focus Area: additional elective [m]		3
	Hours	**16**
Spring		
GE: Engineering Be Creative [n]		3
CBE:3120	Chemical Reaction Engineering [b]	3
CBE:3150	Thermodynamics/Transport Laboratory [f]	3
CBE:3205	Introduction to Biochemical Engineering [f]	3
Focus Area: topic course [m]		3
CBE:3000	Professional Seminar: Chemical Engineering [b]	1
	Hours	**16**
Fourth Year		
Fall		
CBE:3155	Chemical Reaction Engineering/ Separations Laboratory [e]	3
CBE:3000	Professional Seminar: Chemical Engineering [b]	1
CBE:4105	Process Dynamics and Control in Design [e]	3
CBE:4109	Chemical Engineering Process Design I [e]	2
advanced chemistry or biochemistry course [o]		3
Focus Area: topic course [m]		3
Focus Area: topic course [m]		3
	Hours	**18**
Spring		
GE: Approved Course Subjects [g]		3
GE: Approved Course Subjects [g]		3
CBE:4110	Chemical Engineering Process Design II [f]	3
advanced science course [p]		3
Focus Area: topic course [m]		3
CBE:4195	Senior Enriching Activities Seminar [f]	0

Degree Application: apply on MyUI before deadline (typically in February for spring, September for fall) [q]	
Hours	**15**
Total Hours	**133**

a Typically this course is offered in fall, spring, and summer sessions. Check MyUI for course availability since offerings are subject to change.

b Typically this course is offered in fall and spring semesters. Check MyUI for course availability since offerings are subject to change.

c Enrollment in math courses requires completion of a placement exam.

d Enrollment in chemistry courses requires completion of a placement exam.

e Typically this course is offered in fall semesters only. Check MyUI for course availability since offerings are subject to change.

f Typically this course is offered in spring semesters only. Check MyUI for course availability since offerings are subject to change.

g See General Catalog for list of approved course subjects. Some focus areas recommend or require specific courses. See General Catalog, chemical and biochemical engineering website, or consult your advisor.

h CHEM:2210 typically is offered in fall, spring, and summer sessions. CHEM:2230 typically is offered in fall semesters only. Check MyUI for course availability since offerings are subject to change.

i Students select a course from one of two GE CLAS Core areas: Understanding Cultural Perspectives or Values and Society. Some focus areas recommend or require specific courses. See General Catalog, chemical and biochemical engineering website, or consult your advisor.

j CBE:3020 typically is offered in spring semesters only. STAT:2020 and STAT:3510 typically is offered in fall and spring semesters. Check MyUI for course availability since offerings are subject to change.

k CHEM:2220 typically is offered in fall, spring, and summer sessions. CHEM:2240 typically is offered in spring semesters only. Check MyUI for course availability since offerings are subject to change.

l CHEM:2410 typically is offered in fall, spring, and summer sessions. CHEM:2420 typically is offered in spring semesters only. Check MyUI for course availability since offerings are subject to change.

m Students select one of many preexisting focus areas or work with an advisor to develop a custom focus area. Focus areas require 12 s.h. specific to their content area and a 3 s.h. elective course. Some focus areas may also suggest or require specific courses to fulfill the General Education Component, advanced chemistry, or advanced science courses. Students who do not declare a specific focus area are automatically placed in chemical process engineering. See General Catalog or consult an advisor for more information.

n See General Catalog for list of approved courses. Students who intend to enroll in a Be Creative course with prerequisites must request a waiver by completing the Request Prerequisite Special Permission form on MyUI. Some focus areas may require specific courses to fulfill this requirement.

o The advanced chemistry/biochemistry course must have a course subject of CHEM or BMB. Some focus areas may suggest or require specific courses to fulfill the advanced chemistry requirement. See General Catalog or consult an advisor for more information.

p Students select an advanced science-based course either within or outside of the College of Engineering. Appropriate subject areas could include biochemistry and molecular biology (prefix BMB), biology (prefix BIOL), chemistry (prefix CHEM), microbiology and immunology (prefix MICR), and physics (PHYS). Some focus areas may suggest or require specific courses to fulfill the advanced science requirement. See General Catalog or consult an advisor for more information.

q Please see Academic Calendar, on Office of the Registrar website, for current degree application deadlines. Students should apply for a degree for the session in which all requirements will be met. For any questions on appropriate timing, contact your academic advisor or Degree Services.