Chemical Engineering Bachelor's Degree

Suggested 4-year program plan

YEAR 1

First semester — 16 credits

CHEM 202	Accelerated Chemistry	3 hours
CHEM 203	Accelerated Chemistry Lab	2 hours
MATH 221	Calculus I	4 hours
RHET 105	Composition I	4 hours
ENG 100	Engineering Orientation	1 hours
	General Electives	3 hours

Second semester — 16 credits

CHBE 121	ChBE Profession	1 hour
CHEM 204	Accelerated Chemistry II	3 hours
CHEM 205	Accelerated Chemistry II Lab	2 hours
MATH 231	Calculus II	3 hours
PHYS 211	Intro to Phys - Mechanics	4 hours
CS 101	Intro to Computing for Engineering	3 hours

YEAR 2

First semester — 17 credits

CHBE 221	Principles of Chemical Engineering	3 hours
CHEM 236	Fundamental Organic Chemistry	4 hours
CHEM 237	Structure and Synthesis	2 hours
MATH 241	Calculus III	4 hours
PHYS 212	Electricity & Magnetism	4 hours

Second semester — 18 credits

CHBE 321	Chem. Engineering Thermodynamics	4 hours	] OR
CHBE 421	Momentum and Heat Transfer	4 hours	
CHEM 436	Fundamental Organic Chemistry II	3 hours	] OR
MCB 450	Introductory Biochemistry*	3 hours	
MATH 285	Introduction to Differential Equations	3 hours	
MATH 415	Applied Linear Algebra	3 hours	] OR
MATH 257	Linear Algebra w/ Comp. Applications	3 hours	
PHYS 214	Quantum Physics	2 hours	
	Technical/General Electives	3 hours	

**For Biomolecular Engineering concentration take MCB 450*

YEAR 3

First semester — 17 credits

CHBE 321	Thermodynamics	4 hours	] OR
CHBE 421	Momentum and Heat Transfer	4 hours	
CHEM 442	Physical Chemistry	4 hours	
CHEM 420	Instrumental Characterization	2 hours	
CHEM 315	Instrumental Chemical Systems Lab	2 hours	
IE 300	Analysis of Data	3 hours	

Second semester — 17 credits

CHBE 422	Mass Transfer Operations	4 hours
CHBE 424	Chemical Reaction Engineering	3 hours
	Technical/General Electives	10 hours

YEAR 4

First semester — 16 credits

CHBE 430	Unit Operations Laboratory	4 hours	] OR
CHBE 431	Process Design	4 hours	
CHBE 440	Process Control and Dynamics	3 hours	
	Technical/General Electives	9 hours	

Second semester — 14 credits

CHBE 430	Unit Operations Laboratory	4 hours	] OR
CHBE 431	Process Design	4 hours	
	Technical/General Electives	10 hours	

CHEM courses CHBE courses Other courses

Contact scs-advising@illinois.edu with any questions.