

# CHEMICAL ENGINEERING

<i>Fall Quarter</i>	<i>Units</i>	<i>Winter Quarter</i>	<i>Units</i>	<i>Spring Quarter</i>	<i>Units</i>	To earn a B.S., you must complete all College and University requirements. For a full list of requirements, go to <a href="http://catalog.ucr.edu">catalog.ucr.edu</a> .
FIRST YEAR						
CEE 010 <i>Intro to Chem. &amp; Envir. Engineering</i>	1	CHEM 001B & CHEM 01LB <i>General Chemistry &amp; Lab</i>	5	CHEM 001C & CHEM 01LC <i>General Chemistry &amp; Lab</i>	5	
CHEM 001A & CHEM 01LA <i>General Chemistry &amp; Lab</i>	5	ENGL 001B <i>Intermediate Composition</i>	4	ENGL 001C or Alternate* <i>Applied Intermediate Composition</i>	4	
ENGL 001A <i>Beginning Composition</i>	4	MATH 009B <i>First Year Calculus</i>	4	MATH 009C <i>First Year Calculus</i>	4	
MATH 009A <i>First Year Calculus</i>	4	PHYS 040A <i>Physics (Mechanics)</i>	5	PHYS 040B <i>Physics (Heat/Waves/Sound)</i>	5	
SECOND YEAR						BREADTH REQUIREMENTS
CHE 110A <i>Chemical Process Analysis</i>	3	BIOL 005A & BIOL 05LA <i>Cell &amp; Molecular Biology &amp; Lab</i>	5	CHEM 008C & CHEM 08LC <i>Organic Chemistry</i>	4	For an approved list of Breadth courses, go to <a href="http://student.engr.ucr.edu/policies/requirements/breadth.html">http://student.engr.ucr.edu/policies/requirements/breadth.html</a> .
CHEM 008A & CHEM 08LA <i>Organic Chemistry</i>	4	CHE 110B <i>Chemical Process Analysis</i>	3	CS 009A <i>Intro to Programming</i>	4	
MATH 046 <i>Differential Equations</i>	4	CHEM 008B & CHEM 08LB <i>Organic Chemistry</i>	4	MATH 010B <i>Multivariable Calculus</i>	4	
PHYS 040C <i>Physics (Electricity/Magnetism)</i>	5	MATH 010A <i>Multivariable Calculus</i>	4	Breadth _____ <i>Humanities/Social Sciences</i>	4	
THIRD YEAR						
BCH 100 or BCH 110A <i>General Biochemistry</i>	4	CHE 100 <i>Engineering Thermodynamics</i>	4	CHE 116 <i>Heat Transfer</i>	4	Humanities: (3 courses)
CHE 114 <i>Applied Fluid Mechanics</i>	4	CHE 120 <i>Mass Transfer</i>	4	CHE/ENVE 130 <i>Advanced Engr. Thermodynamics</i>	4	A. World History: _____
ENGR 118 <i>Engineering Modeling &amp; Analysis</i>	4	Breadth _____ <i>Humanities/Social Sciences</i>	4	CHE/ENVE 160A <i>Chem. &amp; Envir. Engineering Lab</i>	3	B. Fine Arts, Lit., Phil. or Rlst: _____
Breadth _____ <i>Humanities/Social Sciences</i>	4	Breadth _____ <i>Humanities/Social Sciences</i>	4	CHE 122 <i>Chemical Engineering Kinetics</i>	4	C. Human Persp. on Science: _____
FOURTH YEAR						Social Sciences: (3 courses)
CHE 117 <i>Separation Processes</i>	4	CHE 118 <i>Process Dynamics and Control</i>	4	CHE 140 <i>Cell Engineering</i>	4	A. Econ. or Posc.: _____
CHE 124 <i>BioChemical Engr. Principles</i>	4	CHE 160C <i>Chemical Engineering Lab</i>	3	CHE 175B <i>Chemical Process Design</i>	4	B. Anth., Psyc, or Soc.: _____
CHE 124L <i>Biochemical Engineering Lab</i>	2	CHE 175A <i>Chemical Process Design</i>	4	Technical Elective** _____	4	C. General Social Science: _____
CHE 160B <i>Chemical Engineering Lab</i>	4	Breadth _____ <i>Humanities/Social Sciences</i>	4	Breadth _____ <i>Humanities/Social Sciences</i>	4	Ethnicity: (1 course)
CEE 158	3					1. _____
						Upper Division: (2 courses)
						1. _____
						2. _____
						TECHNICAL ELECTIVES **
						Please note that Technical Electives may be offered throughout the Academic Year. Consult with your Faculty Mentor about potential offerings. See approved technical electives on back.
						Course Plan is subject to change.
						Total Units: 193

## Chemical Engineering-Biochemical Option Technical Electives

You must complete 4 units of Technical Elective coursework. Select from the list below:

Course	Course Title (Units)
BIEN 125*	Biotechnology and Molecular Bioengineering (4)
BIEN/CEE 140A	Biomaterials (4)
BIEN/CEE 159*	Dynamics of Biological Systems (4)
BIOL/MCBL 121*	Introduction to Microbiology (4)
CEE 125	Analytical Methods for Chemical and Environmental Engineers (4)
CEE 132	Green Engineering (4)
CEE 135	Chemistry of Materials(4)
CHE 102	Catalytic Reaction Engineering (4)
CHE 150	Biosensors (4)

\*Course requires prerequisites not accounted for in curriculum. Please check with the undergraduate faculty advisor about the ability to take this course.