UCR | Bourns College of Engineering

Suggested Course Plan for a UC Riverside Major in

CHEMICAL ENGINEERING

Biochemical Engineering Option

Catalog Year: 2016

Fall Quarter	*Units*	*Winter Quarter*	*Units*	*Spring Quarter*	*Units*
FIRST YEAR					
CEE 010	2	CHEM 001B & CHEM 01LB	5	CHEM 001C & CHEM 01LC	5
Intro to Chem. & Envir. Engineering		*General Chemistry & Lab*		*General Chemistry & Lab*	
CHEM 001A & CHEM 01LA	5	ENGL 001B	4	ENGL 001C or Alternate*	4
General Chemistry & Lab		*Intermediate Composition*		*Applied Intermediate Composition*	
ENGL 001A	4	MATH 009B	4	MATH 009C	4
Beginning Composition		*First Year Calculus*		*First Year Calculus*	
MATH 009A	4	PHYS 040A	5	PHYS 040B	5
First Year Calculus		*Physics (Mechanics)*		*Physics (Heat/Waves/Sound)*	
SECOND YEAR					
CHE 110A	3	BIOL 005A & BIOL 05LA	5	CHEM 112C	4
Chemical Process Analysis		*Cell & Molecular Biology & Lab*		*Organic Chemistry*	
CHEM 112A	4	CHE 110B	3	CS 010	4
Organic Chemistry		*Chemical Process Analysis*		*C++ Programming*	
MATH 046	4	CHEM 112B	4	MATH 010B	4
Differential Equations		*Organic Chemistry*		*Multivariable Calculus*	
PHYS 040C	5	MATH 010A	4	Breadth _____	4
Physics (Electricity/Magnetism)		*Multivariable Calculus*		*Humanities/Social Sciences*	
THIRD YEAR					
BCH 100 or BCH 110A	4	CEE 158	3	CHE 116	4
General Biochemistry		*Professional Development for Engr*		*Heat Transfer*	
CHE 114	4	CHE 100	4	CHE/ENVE 130	4
Applied Fluid Mechanics		*Engineering Thermodynamics*		*Advanced Engr. Thermodynamics*	
ENGR 118	5	CHE 120	4	CHE/ENVE 160A	3
Engineering Modeling & Analysis		*Mass Transfer*		*Chem. & Envir. Engineering Lab*	
Breadth _____	4	Breadth _____	4	CHE 122	4
Humanities/Social Sciences		*Humanities/Social Sciences*		*Chemical Engineering Kinetics*	
FOURTH YEAR					
CHE 117	4	CHE 118	4	CHE 140	4
Separation Processes		*Process Dynamics and Control*		*Cell Engineering*	
CHE 124	4	CHE 160C	3	CHE 175B	4
BioChemical Engr. Principles		*Chemical Engineering Lab*		*Chemical Process Design*	
CHE 124L	2	CHE 175A	4	Technical Elective**	4
Biochemical Engineering Lab		*Chemical Process Design*		_____	
CHE 160B	4	Breadth _____	4	Breadth _____	4
Chemical Engineering Lab		*Humanities/Social Sciences*		*Humanities/Social Sciences*	
Breadth _____	4				
Humanities/Social Sciences					

To earn a B.S., you must complete all College and University requirements. For a full list of requirements, go to www.catalog.ucr.edu.

ENGLISH COMPOSITION*

A C or better is required in all English Composition courses to satisfy the graduation requirement. Please consult with your Academic Advisor for ENGL 1C alternatives.

BREADTH REQUIREMENTS

For an approved list of Breadth courses, go to http://student.engr.ucr.edu/policies/requirements/breadth.html.

Humanities: (3 courses)

A. World History: _____

B. Fine Arts, Lit., Phil. or Rlst: _____

C. Human Persp. on Science: _____

Social Sciences: (3 courses)

A. Econ. or Posc.: _____

B. Anth., Psyc, or Soc.: _____

C. General Social Science: _____

Ethnicity: (1 course)

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: 194

Maximum units: 233

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	Biotehnolocy 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 132	Green Engineering (4)
CEE 135	Chemistry of Materials(4)
CHE 150	Biosensors (4)
CHE 171	Pollution Control for Chemical Engineers (4)
ENVE 121*	Biological Unit Processes (4)

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