UCR Marlan and Rosemary Bourns College of Engineering

Suggested Course Plan for a UC Riverside Major in

CHEMICAL ENGINEERING

Nanotechnology Option

Catalog Year: 2020

Fall Quarter	Units	Winter Quarter	Units	Spring Quarter	Units
FIRST YEAR					
CEE 010	1	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	CHE 110B	3	MATH 010B	4
Chemical Process Analysis		*Chemical Process Analysis*		*Multivariable Calculus*	
CHEM 008A & CHEM 08LA	4	CHEM 008B & CHEM 08LB	4	CHEM 008C & CHEM 08LC	4
Organic Chemistry		*Organic Chemistry*		*Organic Chemistry*	
MATH 046	4	MATH 010A	4	CS 010A	4
Differential Equations		*Multivariable Calculus*		*C++ Programming*	
PHYS 040C	5	CHE 100	4	Breadth _____	4
Physics (Electricity/Magnetism)		*Engineering Thermodynamics*		*Humanities/Social Sciences*	
THIRD YEAR					
BIOL 005A & BIOL 05LA	5	CHE 105	4	CHE 116	4
Cell & Molecular Biology & Lab		*Intro to Nanoscale Engineering*		*Heat Transfer*	
CEE 135	4	CHE 120	4	CHE/ENVE 130	4
Chemistry of Materials		*Mass Transfer*		*Advanced Engr. Thermodynamics*	
CHE 114	4	Breadth _____	4	CHE/ENVE 160A	3
Applied Fluid Mechanics		*Humanities/Social Sciences*		*Chem. & Envir. Engineering Lab*	
ENGR 118	5	Breadth _____	4	CHE 122	4
Engineering Modeling & Analysis		*Humanities/Social Sciences*		*Chemical Engineering Kinetics*	
FOURTH YEAR					
CHE 117	4	CHE 118	4	CHE 161	3
Separation Processes		*Process Dynamics and Control*		*Nanotechnology Processing Lab*	
CHE 160B	3	CHE 160C	3	CHE 175B	4
Chemical Engineering Lab		*Chemical Engineering Lab*		*Chemical Process Design*	
Technical Elective**	4	CHE 175A	4	Technical Elective**	4
_____		*Chemical Process Design*		_____	
CEE 158	3	Breadth _____	4	Breadth _____	4
Professional Development for Engr		*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 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: (2courses)

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: 222

Chemical Engineering-Nanotechnology Option Technical Electives

You must complete 8 units of Technical Elective coursework. Select from the list below:

Course	Course Title (Units)
CHE 102	Catalytic Reaction Engineering (4)
CHE 131	Electrochemical Engineering (4)
ENVE 133	Fundamentals of Air Pollution Engineering (4)
ME 114	Intro to Materials Science and Engineering (4)
MSE 160*	Nanostructure Characterization Lab (4)
MSE 161*	Analytic Materials Charactization (4)

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