## Suggested Course Plan for a UC Riverside Major in CHEMICAL ENGINEERING

### Fall Quarter
- **CEE 010** 2 units: Intro to Chem. & Envir. Engineering
- **CHEM 001A & CHEM 01LA** 5 units: General Chemistry & Lab
- **ENGL 001A** 4 units: First Year Calculus
- **PHYS 040A** 5 units: Physics (Mechanics)

### Winter Quarter
- **CHEM 001B & CHEM 01LB** 5 units: General Chemistry & Lab
- **ENGL 001B** 4 units: Intermediate Composition
- **MATH 009B** 4 units: First Year Calculus
- **PHYS 040A** 5 units: Physics (Heat/Waves/Sound)

### Spring Quarter
- **CHEM 001C & CHEM 01LC** 5 units: General Chemistry & Lab
- **ENGL 001C or Alternate** 4 units: Applied Intermediate Composition
- **MATH 009C** 4 units: First Year Calculus
- **PHYS 040B** 5 units: Engineering Thermodynamics

### First Year

#### Breadth Requirements
- **CHEM 110A** 3 units: Chemical Process Analysis
- **CHEM 112A** 4 units: Organic Chemistry
- **MATH 046** 4 units: Differential Equations
- **PHYS 040C** 5 units: Physics (Electricity/Magnetism)

#### Technical Electives **
- **CHE 117** 4 units: Separation Processes
- **CHE 160B** 3 units: Chemical Engineering Lab
- **CHE 160A** 3 units: Chemical Process Design
- **CHE 118** 4 units: Chemical Engineering Lab
- **CHE 161** 3 units: Nanotechnology Processing Lab
- **CHE 160C** 3 units: Chemical Engineering Lab
- **CHE 175A** 4 units: Technical Elective **
- **CHE 175B** 4 units: Chemical Process Design

### Second Year

#### Breadth Requirements
- **CHE 110B** 3 units: Chemical Process Analysis
- **CHE 112B** 4 units: Organic Chemistry
- **MATH 010A** 4 units: Multivariable Calculus
- **CHE 100** 4 units: Engineering Thermodynamics
- **CHE 105** 4 units: Chemical Engineering Lab
- **CHE 106** 4 units: Heat Transfer
- **CHE 160B** 3 units: Chemical Process Design
- **CHE 160C** 3 units: Chemical Engineering Lab
- **CHE 175A** 4 units: Technical Elective **
- **CHE 175B** 4 units: Chemical Process Design

### Third Year

#### Breadth Requirements
- **CEE 158** 3 units: Professional Development for Engr
- **CHE 115** 4 units: Intro to Nanoscale Engineering
- **ENGR 118** 5 units: Breadth Humanities/Social Sciences
- **BIOI 005A & BIOI 051A** 5 units: Cell & Molecular Biology & Lab
- **CSE 135** 4 units: Chemistry of Materials
- **CHE 114** 4 units: Applied Fluid Mechanics
- **ENGR 118** 5 units: Breadth Humanities/Social Sciences

### Fourth Year

#### Breadth Requirements
- **CHE 118** 4 units: Process Dynamics and Control
- **CHE 160B** 3 units: Chemical Engineering Lab
- **CHE 160B** 3 units: Chemical Engineering Lab
- **CHE 175A** 4 units: Technical Elective **
- **CHE 161** 3 units: Nanotechnology Processing Lab
- **CHE 175B** 4 units: Chemical Process Design
- **CHE 160A** 3 units: Chemical Process Design
- **CHE 175A** 4 units: Technical Elective **
- **CHE 175B** 4 units: Chemical Process Design
- **CHE 160A** 3 units: Chemical Process Design

### Course Plan is subject to change.

Total Units: 187
Maximum units: 234
## Chemical Engineering-Nanotechnology Option Technical Electives

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

<table>
<thead>
<tr>
<th>Course</th>
<th>Course Title (Units)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHE 102</td>
<td>Catalytic Reaction Engineering (4)</td>
</tr>
<tr>
<td>CHE 131</td>
<td>Electrochemical Engineering (4)</td>
</tr>
<tr>
<td>ENVE 133</td>
<td>Fundamentals of Air Pollution Engineering (4)</td>
</tr>
<tr>
<td>ME 114</td>
<td>Intro to Materials Science and Engineering (4)</td>
</tr>
<tr>
<td>MSE 160*</td>
<td>Nanostructure Characterization Lab (4)</td>
</tr>
<tr>
<td>MSE 161*</td>
<td>Analytic Materials Characterization (4)</td>
</tr>
</tbody>
</table>

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