

## Chemical Engineering Concentration Model Program (Fall 2021 New Core)

First Year	Fall (16)	<input type="checkbox"/> 5 Chemistry 101 or 103    General Chemistry I (F&S) - Core K&U 1 <input type="checkbox"/> 3 Engineering 101    Intro to Engineering Design (F) <input type="checkbox"/> 1 Engineering 181    Graphical Communication Lab (F) <input type="checkbox"/> 4 Mathematics 171    Calculus I (F,S) - Core K&U 2 <input type="checkbox"/> 3 <i>Core Foundations</i> <i>Community and Commitments</i>	<div style="border: 1px solid black; padding: 5px;"> <p>★ ENGR 20X - Students must take two out of three of the following courses:            ENGR 202* - Statics and Dynamics            ENGR 204 - Intro to Circuit Analysis and Electronics with Lab            ENGR 205 - Material Science</p> <p>* Course offered as part of the Summer Program in</p> </div>
	Spring (16)	<input type="checkbox"/> 5 Chemistry 102    General Chemistry II (S) <input type="checkbox"/> 4 Mathematics 172    Calculus II (F,S) <input type="checkbox"/> 4 Physics 133    Introductory Physics, Mechanics and Gravity (S) - Core K&U 3 <input type="checkbox"/> 3 <i>Core Comp and Skills</i> <i>Foundational Writing</i>	

\* Possibly insert Summer Program in Germany

Second Year	Fall (16)	<input type="checkbox"/> 4 Engineering 209    Introduction to Conservation Laws and Fluid Mechanics <input type="checkbox"/> 3 Mathematics 270/271    Multivariable Calculus - Math 270 (F only), Math 271 (F,S) <input type="checkbox"/> 4 Physics 235    Introductory Physics: Electricity and Magnetism (F) <input type="checkbox"/> 2 Computer Science 104    Applied Computing (F) (CS 106 or 108 may be substituted but both are 4 SH) <input type="checkbox"/> 3 <i>Core Foundations</i> <i>Foundations of Christianity I</i> <input type="checkbox"/> 0 Engineering 295    Internship Workshop <input type="checkbox"/> 1 Engineering 184    Sustainability Challenges (F) (Required for students seeking Sustainability Designation)
	Spring (17)	<input type="checkbox"/> 4 Engineering 20X ★ <input type="checkbox"/> 4 Engineering 20X ★ <input type="checkbox"/> 4 Mathematics 231    Differential Equations with Linear Algebra (F,S) <input type="checkbox"/> 3 <i>Core Foundations</i> <i>Foundations of Christianity II</i> <input type="checkbox"/> 2 <i>Statistics 241</i> <i>Engineering Statistics (S)</i> <input type="checkbox"/> 0 Engineering 294    Engineering Seminar (does not require registration in advance)

\* Possibly insert Summer Program in Germany

Third Year	Fall (17)	<input type="checkbox"/> 3 Engineering 303    Chem. Engr. Principles & Thermodynamics (F) <input type="checkbox"/> 5 Chemistry 241 OR 240    Organic Chemistry I or Fund. of Organic Chemistry (F) <input type="checkbox"/> 4 Chemistry 351    Physical Chemistry I (F) <input type="checkbox"/> 3 <i>ECON 151/221/232/233</i> <i>Core K&amp;U 4</i> <input type="checkbox"/> 2 <i>Interdisciplinary 102</i> <i>Oral Rhetoric for Engineers (F,S) - Core K&amp;U 5</i>
	Spring (17)	<input type="checkbox"/> 4 Engineering 312    Chemical Engineering Thermodynamics (S) <input type="checkbox"/> 4 Engineering 330    Fluid Flow & Heat Transfer (S) <input type="checkbox"/> 5 Chemistry 242    Organic Chemistry II (S) OR Chemistry 324L plus (Chemistry 320 OR 321) Biochemistry & Lab <input type="checkbox"/> 1 <i>Core Comp and Skills</i> <i>Health and Movement</i> <input type="checkbox"/> 3 <i>Core Knowledge and Understanding (see Core Options sheet)</i>

Internship Experience (ENGR 385 Optional)

Fourth Year	Fall (17)	<input type="checkbox"/> 4 Engineering 331    Kinetics/Reactor Design (F) <input type="checkbox"/> 4 Engineering 335    Mass Transfer & Staging Operations (F) <input type="checkbox"/> 2 Engineering 339    Senior Design Project (F) - Core Contemporary Challenges <input type="checkbox"/> 1 Engineering 351    Process Safety (F) <input type="checkbox"/> 4 <i>Elective: Advanced Science</i> <input type="checkbox"/> 2 Business 357    Business Aspects for Engineers (F)	<div style="border: 1px solid black; padding: 5px;"> <p><i>Pink listings (core humanities courses) may be taken in any semester. ECON should be taken prior to BUS 357.</i></p> <p>See University Catalog or Elective Options sheet for courses allowed for the orange and green categories. Classes shaded in light brown are optional.</p> </div>
	Spring (17)	<input type="checkbox"/> 2 Engineering 337    Chemical Engineering Laboratory (S) <input type="checkbox"/> 4 Engineering 340    Senior Design Project (S) <input type="checkbox"/> 4 Engineering 342    Process Control (S) <input type="checkbox"/> 3 <i>Core Knowledge and Understanding (see Core Options sheet)</i> <input type="checkbox"/> 3 <i>Core Knowledge and Understanding (see Core Options sheet)</i> <input type="checkbox"/> 1 <i>Core Comp and Skills</i> <i>Health and Movement</i> <input type="checkbox"/> 0 Engineering 394    Engineering Seminar (does not require registration in advance) <input type="checkbox"/> 1 Engineering 384    Sustainability Analysis (S) (Required for students seeking Sustainability Designation)	

### Other Requirements

- 0-8 *Core Comp and Skills: World Languages I (3 years in HS with B or better)*
- 0-3 *Engaged Citizenship Commitment Tag: Diversity and Difference*
- 0-3 *Engaged Citizenship Commitment Tag: Environmental Sustainability*
- 0-3 *Engaged Citizenship Commitment Tag: Global Regions and Cultures*

Revised Oct 2021