

## Chemical Engineering Concentration Model Program (Starting Fall 2020 or before)

First Year	Fall (17)	<input type="checkbox"/> 5 Chemistry 101	General Chemistry I (F,S)
		<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)
		<input type="checkbox"/> 3 <i>English 101</i>	<i>Written Rhetoric</i>
	<input type="checkbox"/> 1 Interdisciplinary 149	First Year Seminar	
	INT	<input type="checkbox"/> 3 <i>Interdisciplinary 150</i>	<i>Developing the Christian Mind</i>
	Spring (17)	<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)
<input type="checkbox"/> 3 <i>History Core</i>		<i>See Core Curriculum section of catalog for options</i>	
<input type="checkbox"/> 1 <i>Health and Fitness</i>		<i>See Core Curriculum section of catalog for options</i>	

★ **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

\* Course offered as part of the Summer Program in Germany

\* 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>Religion 121 or 131</i>	<i>Biblical Literature/Christian Theology</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>Economics 221 or 151</i>		<i>Principles of Economics/Principles of Microeconomics (ECON 232 or 233 may be substituted)</i>	
<input type="checkbox"/> 2 <i>Statistics 241</i>		<i>Engineering Statistics (S)</i>	
<input type="checkbox"/> 0 Engineering 294	Seminar		

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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 + 351L	Physical Chemistry I (F)
		<input type="checkbox"/> 3 <i>The Arts</i>	<i>See Core Curriculum section of catalog for options</i>
		<input type="checkbox"/> 2 <i>Interdisciplinary 102</i>	<i>Oral Rhetoric for Engineers (F,S)</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 + 242L	Organic Chemistry II (S)
		OR Chemistry 324L plus (Chemistry 320 OR 321) Biochemistry & Lab	
		<input type="checkbox"/> 1 <i>Health and Fitness</i>	<i>See Core Curriculum section of catalog for options</i>
<input type="checkbox"/> 3 <i>Philosophy 153</i>	<i>Fundamental Questions in Philosophy</i>		

*Pink listings (core humanities courses) may be taken in any semester. ECON should be taken prior to BUS 357. PHIL 153 and REL 121/131 should be taken prior to ENGR 340.*

Fourth Year	Fall (18)	<input type="checkbox"/> 4 Engineering 331	Kinetics/Reactor Design
		<input type="checkbox"/> 4 Engineering 335	Mass Transfer & Staging Operations (F)
		<input type="checkbox"/> 2 Engineering 339	Senior Design Project (F)
		<input type="checkbox"/> 1 Engineering 351	Process Safety (F)
		<input type="checkbox"/> 4 <i>Elective: Advanced Science (2 SH minimum)</i>	
		<input type="checkbox"/> 2 Business 357	Business Aspects for Engineers (F)
	<input type="checkbox"/> 1 Engineering 384	Sustainability Analysis (Required for students seeking Sustainability Designation)	
	Spring (15)	<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"/> 4 <i>Literature</i>		<i>See Core Curriculum section of catalog for options</i>	
<input type="checkbox"/> 1 <i>Health and Fitness</i>		<i>See Core Curriculum section of catalog for options</i>	
<input type="checkbox"/> 0 Engineering 394	Engineering Seminar		
<input type="checkbox"/> 3 Free Elective			

See Elective Options sheet for courses allowed for the **orange** and **green** categories.

Classes shaded in light brown are optional.

### Other Requirements

- 0-8 *Foreign Language (2 years of high school or one year of college)*

