

BSE: Chemical Engineering Concentration Model Program (Starting Fall 2023 or Later)

First Year	Fall (16)	<input type="checkbox"/> 4 Chemistry 101 + 101L General Chemistry I (F,S) - or Chemistry 103 + 103L <input type="checkbox"/> 4 Engineering 101 + 101L Intro to Engineering Design (F) <input type="checkbox"/> 4 Mathematics 171 Calculus I (F,S) <input type="checkbox"/> 2 <i>Core Foundations</i> <i>CORE 100: Community and Commitments</i> <input type="checkbox"/> 2 <i>Interdisciplinary 102</i> <i>Oral Rhetoric For Engineers</i> (or CS 104)	★ ENGR 20X - Students must take two out of three of the following courses (F, S): ENGR 202* - Statics and Dynamics ENGR 204 - Intro to Circuit Analysis and Electronics with Laboratory ENGR 205 - Material Science * Course offered as part of the Summer Program in Germany
	Spring (17)	<input type="checkbox"/> 4 Chemistry 102 + 102L General Chemistry II (S) <input type="checkbox"/> 4 Mathematics 172 Calculus II (F,S) <input type="checkbox"/> 4 Physics 133 + 133L Introductory Physics: Mechanics and Gravity (S) <input type="checkbox"/> 4 <i>Core Comp and Skills</i> <i>Foundational Writing (ENGL 101)</i> <input type="checkbox"/> 1 <i>Core Comp and Skills</i> <i>Health and Movement (Personal Fitness)</i>	
* Possibly insert Summer Program in Germany			
Second Year	Fall (16)	<input type="checkbox"/> 4 Engineering 209 Introduction to Conservation Laws and Fluid Mechanics (F, S) <input type="checkbox"/> 4 Mathematics 271 Multivariable Calculus (F,S) <input type="checkbox"/> 4 Physics 235 + 235L Introductory Physics: Electricity and Magnetism (F) <input type="checkbox"/> 2 Comp Sci 104 + 104L Applied Computing (F) (CS 106 or 108 may be substituted but both are 4 SH) <input type="checkbox"/> 2 <i>Core Knowledge and Understanding (see Core Options sheet) - tagged</i> <input type="checkbox"/> 0 Engineering 295 Internship Workshop <input type="checkbox"/> 2 Interdisciplinary 184 Introduction to Sustainability Challenges (F,S) (ES tag, required for Sustainability Designation)	
	Spring (18)	<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"/> 2 <i>Statistics 241</i> <i>Engineering Statistics (S)</i> <input type="checkbox"/> 4 <i>Core Foundations</i> <i>Foundations of Christianity I</i> <input type="checkbox"/> 0 Engineering 294 Engineering Seminar (does not require registration in advance)	
* Possibly insert Summer Program in Germany			
Third Year	Fall (16)	<input type="checkbox"/> 4 Engineering 303 + 303L Chem. Engr. Principles & Thermodynamics (F) <input type="checkbox"/> 4 Chemistry 241 + 241L Organic Chemistry I (F) OR Chemistry 240 + 240L Fundamentals of Organic Chemistry (F) <input type="checkbox"/> 4 Chemistry 351 + 351L Physical Chemistry I (F) <input type="checkbox"/> 2 <i>Core Foundations</i> <i>Foundations of Christianity II</i> <input type="checkbox"/> 2 <i>Economics (2 SH min)</i> <i>ECON 191 (2) or 233 (4, ES tag) - ECON 221, 222, or 232 may be added or substituted</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"/> 4 Chemistry 242 + 242L Organic Chemistry II (S) OR Biochemistry 321 + 321L Principles of Biochemistry (F,S) <input type="checkbox"/> 4 <i>Core Knowledge and Understanding (see Core Options sheet) - tagged</i> <input type="checkbox"/> 1 <i>Core Comp and Skills</i> <i>Health and Movement (Leisure, Sport, and Skills)</i>	<i>Pink listings (core humanities courses) may be taken in any semester. ECON must be taken prior to BUS 357.</i> See University Catalog or Elective Options sheet for courses allowed for the orange and green categories. Classes shaded in light brown are optional.
Internship Experience (ENGR 385 Optional)			
Fourth Year	Fall (16)	<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) <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 Interdisciplinary 384 Sustainability Experience (F,S) (Required for students seeking Sustainability Designation)	
	Spring (16)	<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 + 342L Process Dynamics, Modeling, and Control (S) <input type="checkbox"/> 4 <i>Core Knowledge and Understanding (see Core Options sheet) - tagged</i> <input type="checkbox"/> 2 <i>Core Knowledge and Understanding (see Core Options sheet - 26 SH of total K&U minimum)</i> <input type="checkbox"/> 0 Engineering 394 Engineering Seminar (does not require registration in advance)	

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 Mar 2024