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

### First Year

**Fall (16)**
- 5 Chemistry 101 or 103 General Chemistry I (F&S) - Core K&U 1
- 3 Engineering 101 Intro to Engineering Design (F)
- 1 Engineering 181 Graphical Communication Lab (F)
- 4 Mathematics 171 Calculus I (F,S) - Core K&U 2
- 3 Core Foundations Community and Commitments

**Spring (16)**
- 5 Chemistry 102 General Chemistry II (S)
- 4 Mathematics 172 Calculus II (F,S)
- 4 Physics 133 Introductory Physics, Mechanics and Gravity (S) - Core K&U 3
- 3 Core Comp and Skills Foundational Writing

### Second Year

**Fall (16)**
- 4 Engineering 209 Introduction to Conservation Laws and Fluid Mechanics
- 4 Mathematics 270/271 Multivariable Calculus - Math 270 (F only), Math 271 (F,S)
- 4 Physics 235 Introductory Physics: Electricity and Magnetism (F)
- 2 Computer Science 104 Applied Computing (F) (CS 106 or 108 may be substituted but both are 4 SH)
- 3 Core Foundations Foundations of Christianity I
- 0 Engineering 295 Internship Workshop
- 1 Engineering 184 Sustainability Challenges (F) (Required for students seeking Sustainability Designation)

**Spring (17)**
- 4 Engineering 20X ★
- 4 Engineering 20X ★
- 4 Mathematics 231 Differential Equations with Linear Algebra (F,S)
- 3 Core Foundations Foundations of Christianity II
- 2 Statistics 241 Engineering Statistics (S)
- 0 Engineering 294 Engineering Seminar (does not require registration in advance)

### Third Year

**Fall (17)**
- 3 Engineering 303 Chem. Engr. Principles & Thermodynamics (F)
- 5 Chemistry 241 OR 240 Organic Chemistry I or Fund. of Organic Chemistry (F)
- 4 Chemistry 351 Physical Chemistry I (F)
- 3 ECON 151/221/232/233 Core K&U 4
- 2 Interdisciplinary 102 Oral Rhetoric for Engineers (F,S) - Core K&U 5

**Spring (17)**
- 4 Engineering 312 Chemical Engineering Thermodynamics (S)
- 4 Engineering 330 Fluid Flow & Heat Transfer (S)
- 5 Chemistry 242 Organic Chemistry II (S)
- OR Chemistry 324L plus (Chemistry 320 OR 321) Biochemistry & Lab
- 1 Core Comp and Skills Health and Movement
- 3 Core Knowledge and Understanding (see Core Options sheet)

### Internship Experience (ENGR 385 Optional)

**Fall (17)**
- 4 Engineering 331 Kinetics/Reactor Design (F)
- 4 Engineering 335 Mass Transfer & Staging Operations (F)
- 2 Engineering 339 Senior Design Project (F) - Core Contemporary Challenges
- 1 Engineering 351 Process Safety (F)
- 4 Elective: Advanced Science
- 2 Business 357 Business Aspects for Engineers (F)

**Spring (17)**
- 2 Engineering 337 Chemical Engineering Laboratory (S)
- 4 Engineering 340 Senior Design Project (S)
- 4 Engineering 342 Process Control (S)
- 3 Core Knowledge and Understanding (see Core Options sheet)
- 3 Core Knowledge and Understanding (see Core Options sheet)
- 1 Core Comp and Skills Health and Movement
- 0 Engineering 394 Engineering Seminar (does not require registration in advance)
- 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

* 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

Pink listings (core humanities courses) may be taken in any semester. ECON should be taken prior to BUS 357.

See University Catalog or Elective Options sheet for courses allowed for the orange and green categories. Classes shaded in light brown are optional.

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