# BSE: Electrical & Computer Engineering Concentration Model Program (Starting Fall 2023 or Later)

## First Year
- **Fall (16)**
  - 4 Chemistry 101 + 101L General Chemistry I (F,S)
  - 4 Engineering 101 + 101L Intro to Engineering Design (F)
  - 4 Mathematics 171 Calculus I (F,S)
  - 2 Core Foundations CORE 100: Community and Commitments
  - 2 Interdisciplinary 102 Oral Rhetoric for Engineers (or CS 104)
- **Spring (17)**
  - 4 Engineering 205 Principles of Materials Science (S)
  - 4 Mathematics 172 Calculus II (F,S)
  - 4 Physics 133 + 133L Introductory Physics: Mechanics and Gravity (S)
  - 4 Core Comp and Skills Foundational Writing
  - 1 Core Comp and Skills Health and Movement

## Second Year
- **Fall (16)**
  - 4 Engineering 20X ★
  - 4 Mathematics 271 Multivariable Calculus (F,S)
  - 4 Physics 235 + 235L Introductory Physics: Electricity and Magnetism (F)
  - 2 Comp Sci 104 + 104L Applied Computing (F) (CS 106 or 108 may be substituted but both are 4 SH)
  - 2 Core Knowledge and Understanding (see Core Options sheet) - tagged
  - 0 Engineering 295 Internship Workshop
  - 2 Interdisciplinary 184 Intro to Sustainability Challenges (F,S) (ES Tag, required for Sustainability Designation)
- **Spring (18)**
  - 4 Engineering 20X ★
  - 4 Engineering 20X ★
  - 4 Mathematics 231 Differential Equations with Linear Algebra (F,S)
  - 2 Statistics 241 Engineering Statistics (S)
  - 4 Core Foundations Foundations of Christianity I
  - 0 Engineering 294 Engineering Seminar (does not require registration in advance)

## Third Year
- **Fall (16)**
  - 4 Engineering 311 + 311L Electronic Devices and Circuits (F)
  - 4 Engineering 307 Electrical Signals and Systems (F)
  - 4 Comp Sci 112 + 112L Intro to Data Structures with C++ (F,S)
  - 2 Core Foundations Foundations of Christianity II
  - 2 Economics (2 SH min) ECON 191 (2) or 233 (4, ES tag) - ECON 221, 222, or 232 can be added or substituted
- **Spring (17)**
  - 4 Engineering 304 + 304L Fundamentals of Digital Systems (S)
  - 4 Engineering 332 + 332L Analog Circuits and Systems Design (S)
  - 4 Elective: Basic Science, Advanced Math, Engineering, or Technical
  - 4 Core Knowledge and Understanding (see Core Options sheet) - tagged
  - 1 Core Comp and Skills Health and Movement
  - 1 Interdisciplinary 384 Sustainability Experience (F,S) (Required for students seeking Sustainability Designation)

### Internship Experience (ENGR 385 Optional)
- **Fall (16)**
  - 4 Engineering 325 + 325L Computer Architecture and Digital Systems Design (F)
  - 2 Engineering 339 Senior Design Project (F)
  - 4 Engineering Elective
  - 2 Business 357 Business Aspects for Engineers (F)
  - 4 Core Knowledge and Understanding (see Core Options sheet) - tagged
- **Spring (16)**
  - 4 Engineering 302 Engineering Electromagnetics (S)
  - 4 Engineering 340 Senior Design Project (S)
  - 4 Elective: Basic Science or Advanced Math (2 SH minimum)
  - 2 Engineering Elective Typically ENGR 350 (2 SH minimum)
  - 2 Core Knowledge and Understanding (see Core Options sheet - 26 SH of total K&U minimum)
  - 0 Engineering 394 Engineering Seminar (does not require registration in advance)

### Other Requirements
- 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

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* Possibly insert Summer Program in Germany
* ENGR 20X - These courses are required but can be taken in any order (offered fall and spring):
  - ENGR 202* - Statics and Dynamics
  - ENGR 204 - Intro to Circuit Anal. and Electronics with Laboratory
  - ENGR 209 - Intro to Cons. Laws & Fluid Mechanics

* Course offered as part of the Summer Program in Germany

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