Electrical & Computer Engineering Concentration Model Program (Starting Fall 2022)

First Year

Fall (15)

☐	5	Chemistry 101	General Chemistry (F,S)
☐	3	Engineering 101	Intro to Engineering Design (F)
☐	1	Engineering 181	Graphical Communication Lab (F)
☐	4	Mathematics 171	Calculus I (F,S)
☐	*2*	*Core Foundations*	*CORE 100: Community and Commitments*

Spring (17)

☐	3	Engineering 205	Material Science (S)
☐	4	Mathematics 172	Calculus II (F,S)
☐	4	Physics 133 + 133L	Introductory Physics, Mechanics and Gravity (S)
☐	*3*	*Core Foundations*	*Foundations of Christianity I*
☐	*3*	*Core Comp and Skills*	*Foundational Writing*

★ **ENGR 20X** - These courses are required but can be taken in any order:
ENGR 202* - Statics and Dynamics
ENGR 204 - Intro to Circuit Analysis and Electronics with Lab
ENGR 209 - Intro to Conservation Laws & Fluid Mechanics
* Course offered as part of the Summer Program in Germany.

* Possibly insert Summer Program in Germany

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	Computer Sci 104 + 104L	Applied Computing (F) (CS 106 or 108 may be substituted but both are 4 SH)
☐	*2*	*Core Foundations*	*Foundations of Christianity II*
☐	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*	*Core Knowledge and Understanding (see Core Options sheet)*	
☐	*2*	*Interdisciplinary 102*	*Oral Rhetoric for Engineers (F,S)*
☐	2	Statistics 241	Engineering Statistics (S)
☐	0	Engineering 294	Engineering Seminar (does not require registration in advance)

* Possibly insert Summer Program in Germany

Third Year

Fall (17)

☐	4	Engineering 311 + 311L	Electronic Devices and Circuits (F)
☐	4	Engineering 307	Electrical Signals and Systems (F)
☐	4	Computer Sci 112 + 112L	Intro to Data Structures with C++ (F,S)
☐	*2*	*Economics (2 SH min)*	*ECON 191 (2) or 233 (4, ES tag) - ECON 221, 222, or 232 can be added or substituted*
☐	*2*	*Core Knowledge and Understanding (see Core Options sheet) - tagged*	
☐	*1*	*Core Comp and Skills*	*Health and Movement*

Spring (16)

☐	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	Engineering 384	Sustainability Analysis (S) (Required for students seeking Sustainability Designation)

Internship Experience (ENGR 385 Optional)

Fourth Year

Fall (17)

☐	4	Engineering 325 + 325L	Computer Architecture and Digital Systems Design (F)
☐	2	Engineering 339	Senior Design Project (F)
☐	2	Business 357	Business Aspects for Engineers (F)
☐	4	Engineering Elective	
☐	*4*	*Core Knowledge and Understanding (see Core Options sheet) - tagged*	
☐	*1*	*Core Comp and Skills*	*Health and Movement*

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

See Elective Options sheet for courses allowed for green, red, orange, blue and purple categories. Classes shaded in light brown are optional.

Spring (14)

☐	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)
☐	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*

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Calvin Engineering