BSE: Mechanical 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*

★ **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.

* 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 Knowledge and Understanding (see Core Options sheet) - tagged*	
☐	0	Engineering 295	Internship Workshop
	2	Interdisciplinary 184	Intro to Sustainability Challenges (F) (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)

* Possibly insert Summer Program in Germany

Third Year

Fall (16)

☐	4	Engineering 305	Mechanics of Materials (F)
☐	4	Engineering 319	Intro. To Thermal/Fluid Sciences (F)
☐	4	Elective: Basic Science or Advanced Math (2 SH minimum)	
☐	*2*	*Core Foundations*	*Foundations of Christianity II*
☐	*2*	*Economics (2 SH min)*	*ECON 191 (2) or 233 (4, ES tag) - ECON 121, 122, or 232 can be added or substituted*

Spring(17)

☐	4	Engineering 322	Machine Design with Finite Element Analysis (S)
☐	4	Engineering 328	Intermediate Thermal/Fluid Sciences & Design (S)
☐	4	Engineering 334 + 334L	Dynamics of Machinery and Instrumentation (S)
☐	*4*	*Core Knowledge and Understanding (see Core Options sheet) - tagged*	
☐	*1*	*Core Comp and Skills*	*Health and Movement*
	1	Engineering 384	Sustainability Analysis (S) (Required for students seeking Sustainability Designation)

Internship Experience (ENGR 385 Optional)

Fourth Year

Fall (16)

☐	4	Engineering 333	Thermal Systems Designs (F)
☐	2	Engineering 339	Senior Project (F)
☐	4	Engineering Elective	ENGR 314, 315, or 342
☐	4	Elective: Basic Science, Advanced Math, Engineering, or Technical	
☐	2	Business 357	Business Aspects for Engineers (F)

Spring (16)

☐	4	Engineering 324 + 324L	Materials & Processes in Manufacturing (S)
☐	4	Engineering 340	Senior Design Project (S)
☐	2	Engineering Elective	Typically ENGR 350 (2 SH minimum)
☐	*4*	*Core Knowledge and Understanding (see Core Options sheet) - tagged*	
☐	*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)

Pink listings (Calvin Core) 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 green, red, orange, blue and purple categories. Classes shaded in light brown are optional.

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 Feb 2023

Calvin Engineering