Mechanical Engineering Concentration Model Program (Starting Fall 2020 or before)

First Year

Fall (17)	☐	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)
	☐	*3*	*English 101*	*Written Rhetoric*
	☐	1	Interdisciplinary 149	First Year Seminar
INT	☐	*3*	*Interdisciplinary 150*	*Developing the Christian Mind*
Spring(15)	☐	3	Engineering 205	Material Science (S)
	☐	4	Mathematics 172	Calculus II (F,S)
	☐	4	Physics 133	Introductory Physics, Mechanics and Gravity (S)
	☐	*3*	*History Core*	*See Core Curriculum section of catalog for options*
	☐	*1*	*Health and Fitness*	*See Core Curriculum section of catalog for options*

★ **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* ★	
	☐	3	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*	*Religion 121 or 131*	*Biblical Literature/Christian Theology*
	☐	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*	*Economics 221 or 151*	*Principles of Economics/or Microeconomics (ECON 232 or 233 may be substituted)*
	☐	2	Statistics 241	Engineering Statistics (S)
	☐	0	Engineering 294	Seminar

* Possibly insert Summer Program in Germany

Third Year

Fall (17)	☐	4	Engineering 305	Mechanics of Materials (F)
	☐	4	Engineering 319	Intro. To Thermal/Fluid Sciences (F)
	☐	4	Elective: Basic Science or Advanced Math	
	☐	*3*	*The Arts*	*See Core Curriculum section of catalog for options*
	☐	*2*	*Interdisciplinary 102*	*Oral Rhetoric for Engineers (F,S)*
Spring(16)	☐	4	Engineering 322	Machine Design with Finite Element Analysis (S)
	☐	4	Engineering 328	Intermediate Thermal/Fluid Sciences & Design (S)
	☐	3	Engineering 334	Dynamics of Machinery (S)
	☐	1	Engineering 382	Engineering Instrumentation Laboratory (S)
	☐	*1*	*Health and Fitness*	*See Core Curriculum section of catalog for options*
	☐	*3*	*Philosophy 153*	*Fundamental Questions in Philosophy*

Pink listings (core humanities courses) may be taken in any semester. ECON should be taken prior to BUS 357. PHIL 153 and REL 121/131 should be taken prior to ENGR 340.

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

Fourth Year

Fall (17)	☐	4	Engineering 333	Thermal Systems Designs (F)
	☐	2	Engineering 339	Senior Project (F)
	☐	*4*	*Literature*	*See Core Curriculum section of catalog for options*
	☐	4	Elective: Basic Science, Advanced Math, Engineering, or Technical	
	☐	2	Business 357	Business Aspects for Engineers (F)
		1	Engineering 384	Sustainability Analysis (Required for students seeking Sustainaibility Designation)
Spring (15)	☐	4	Engineering 324 + 324L	Materials & Processes in Manufacturing (S)
	☐	4	Engineering 340	Senior Design Project (S)
	☐	4	Engineering Elective	ENGR 314, 315, or 342
	☐	2	Engineering Elective	2 SH minimum
	☐	*1*	*Health and Fitness*	*See Core Curriculum section of catalog for options*
	☐	0	Engineering 394	Engineering Seminar

Other Requirements

☐ *0-8 Foreign Language (2 years of high school or one year of college)*

Calvin Engineering

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