## B.S. in Mechanical Engineering 2020-2021: Option 1 - CWILT

FIRST YEAR					
Fall	Credits	Interim	Credits	Spring	Credits
GES 130 Christianity Western Culture	4	ENR 160 Introduction to Engineering	3	GES 140 Introduction to Wellbeing	3
GES 160 Inquiry Seminar	3			COS 205 Scientific Computing	3
MAT 124M Calculus 1	4			MAT 125 Calculus 2	4
PHY 292 General Physics I	3			PHY 296 General Physics II	3
PHY 292D General Physics I Lab	1			& PHY 297 General Physics II Lab	1
				Artistic Experience (A) course	0-3
	15		3		14-17
SECOND YEAR					
Fall	Credits	Interim	Credits	Spring	Credits
BIB 101 Introduction to the Bible	3	GES 125 Introduction to the Creative Arts	4	ENR 318 Engineering Thermal Science	3
<u>CHE 208</u>	4			PHY 312	4
& CHE 208D				<u>&amp; PHY 313</u>	
Accelerated General Chemistry and Accelerated General				Modern Physics and Modern Physics Lab	
Chemistry Lab					
MAT 223 Multivariable Calculus	3			World Cultures (U) course	3
PHY 302	4			Leisure and Lifetime Sports (Q) course	1
& PHY 303					
Electronics and Electronics Lab					
Second Language (S) course <sup>1</sup>	4			Cross-cultural Experience (Z) course	0-3
	18		4		11-14
THIRD YEAR					
Fall	Credits	Interim	Credits	Spring	Credits
ENR 260 Careers in Engineering and Physics Seminar	1	ENR 265 Computer Aided Design and Engineering		ENR 304	4
				& ENR 305	
				Engineering Materials and Engineering Materials Lab	
MAT 224 Differential Equations with Linear Algebra	4			ENR 308 Statics and Mechanics of Materials	4
PHY 340 Mechanics	4			ENR 348 Heat Transfer	3
THE 201 Christian Theology	3			ENR 446	4
				& ENR 447	
				Control Systems and Control Systems Lab	
Contemporary Western Life and Thought (L) course	3				
Contemporary Western Elle and Modght (E) course					15
	15		3		
FOURTH YEAR	15		3		15
FOURTH YEAR					
Fall	Credits	Interim	Credits	Spring	Credits
	Credits		Credits	Spring ENR 352	
Fall	Credits	Interim	Credits	Spring ENR 352 & ENR 353	
Fall	Credits	Interim	Credits	Spring ENR 352 & ENR 353 Computer Methods in Physics and Engineering and Computer	
Fall <u>ENR 320 Mathematical Methods in Physics and Engineering</u>	Credits 4	Interim Comparative Systems (G) course	Credits	Spring ENR 352 & ENR 353 Computer Methods in Physics and Engineering and Computer Methods in Physics and Engineering Lab	Credits 4
Fall         ENR 320 Mathematical Methods in Physics and Engineering         ENR 356 Fundamentals of Design and Manufacturing	Credits 4	Interim Comparative Systems (G) course	Credits	Spring ENR 352 & ENR 353 Computer Methods in Physics and Engineering and Computer Methods in Physics and Engineering Lab ENR 358 Design of Mechanical Components and Systems	Credits 4
Fall         ENR 320 Mathematical Methods in Physics and Engineering         ENR 356 Fundamentals of Design and Manufacturing         ENR 402 Mechanical Systems and Measurements Lab	Credits 4 3 3	Interim Comparative Systems (G) course	Credits	Spring           ENR 352           & ENR 353           Computer Methods in Physics and Engineering and Computer           Methods in Physics and Engineering Lab           ENR 358 Design of Mechanical Components and Systems           ENR 359 Design of Mechanical Components and Systems Lab	Credits 4 3 1
Fall         ENR 320 Mathematical Methods in Physics and Engineering         ENR 356 Fundamentals of Design and Manufacturing         ENR 402 Mechanical Systems and Measurements Lab         ENR 422	Credits 4	Interim Comparative Systems (G) course	Credits	Spring ENR 352 & ENR 353 Computer Methods in Physics and Engineering and Computer Methods in Physics and Engineering Lab ENR 358 Design of Mechanical Components and Systems	Credits 4
Fall         ENR 320 Mathematical Methods in Physics and Engineering         ENR 356 Fundamentals of Design and Manufacturing         ENR 402 Mechanical Systems and Measurements Lab         ENR 422         & ENR 423	Credits 4 3 3	Interim Comparative Systems (G) course	Credits	Spring           ENR 352           & ENR 353           Computer Methods in Physics and Engineering and Computer           Methods in Physics and Engineering Lab           ENR 358 Design of Mechanical Components and Systems           ENR 359 Design of Mechanical Components and Systems Lab	Credits 4 3 1
Fall         ENR 320 Mathematical Methods in Physics and Engineering         ENR 356 Fundamentals of Design and Manufacturing         ENR 402 Mechanical Systems and Measurements Lab         ENR 422         & ENR 423         Fluid Mechanics and Fluid Mechanics Lab	Credits 4 3 3 4 4	Interim Comparative Systems (G) course	Credits	Spring ENR 352 & ENR 353 Computer Methods in Physics and Engineering and Computer Methods in Physics and Engineering Lab ENR 358 Design of Mechanical Components and Systems ENR 359 Design of Mechanical Components and Systems Lab ENR 490 Engineering Design Project	Credits 4 3 1 3
Fall         ENR 320 Mathematical Methods in Physics and Engineering         ENR 356 Fundamentals of Design and Manufacturing         ENR 402 Mechanical Systems and Measurements Lab         ENR 422         & ENR 423         Fluid Mechanics and Fluid Mechanics Lab         ENR 465 Engineering Design Seminar	Credits 4 3 3 3 4 1 1	Interim Comparative Systems (G) course	Credits	Spring         ENR 352         & ENR 353         Computer Methods in Physics and Engineering and Computer Methods in Physics and Engineering Lab         ENR 358 Design of Mechanical Components and Systems         ENR 359 Design of Mechanical Components and Systems Lab         ENR 490 Engineering Design Project         Science, Technology, and Society (K) course	Credits 4 3 1 3 3 3
Fall         ENR 320 Mathematical Methods in Physics and Engineering         ENR 356 Fundamentals of Design and Manufacturing         ENR 402 Mechanical Systems and Measurements Lab         ENR 422         & ENR 423         Fluid Mechanics and Fluid Mechanics Lab	Credits 4 3 3 3 4 1 1 1 3	Interim Comparative Systems (G) course	Credits 3	Spring         ENR 352         & ENR 353         Computer Methods in Physics and Engineering and Computer Methods in Physics and Engineering Lab         ENR 358 Design of Mechanical Components and Systems         ENR 359 Design of Mechanical Components and Systems Lab         ENR 490 Engineering Design Project         Science, Technology, and Society (K) course         Contemporary Christian Issues (P) course	Credits 4 3 1 3 3 3 3 3
Fall         ENR 320 Mathematical Methods in Physics and Engineering         ENR 356 Fundamentals of Design and Manufacturing         ENR 402 Mechanical Systems and Measurements Lab         ENR 422         & ENR 423         Fluid Mechanics and Fluid Mechanics Lab         ENR 465 Engineering Design Seminar	Credits 4 3 3 3 4 1 1	Interim Comparative Systems (G) course	Credits	Spring         ENR 352         & ENR 353         Computer Methods in Physics and Engineering and Computer Methods in Physics and Engineering Lab         ENR 358 Design of Mechanical Components and Systems         ENR 359 Design of Mechanical Components and Systems Lab         ENR 490 Engineering Design Project         Science, Technology, and Society (K) course         Contemporary Christian Issues (P) course	Credits 4 3 1 3 3 3

Students must complete through the second semester of a first year language course or equivalent. (Check the catalog for details of this option.)

Most financial aid packages stipulate 12 credits/semester; Minnesota state grants are reduced when credit load falls below 15 credits/semester. (Interim credits may be split between fall and spring for state grant purposes only.)

## B.S. in Mechanical Engineering 2020-2021: Option 2 - Humanities

FIRST YEAR					
Fall	Credits	Interim	Credits	Spring	Credits
BIB 101 Introduction to the Bible	3	GES 147 Humanities II: Renaissance and Reformation	4	COS 205 Scientific Computing	3
GES 145 Humanities I: Greco-Roman through Middle Ages	4			GES 140 Introduction to Wellbeing	3
MAT 124M Calculus 1	4			GES 244 Humanities III: European Enlightenment and American	4
				Culture to 1877	
PHY 292 General Physics I	3			MAT 125 Calculus 2	4
PHY 292D General Physics I Lab	1			PHY 296 General Physics II	3
				& PHY 297 General Physics II Lab	1
	15		4		18
SECOND YEAR	15				10
Fall	Cradita	Interim	Credits	Caring	Credits
CHE 208	4	ENR 160 Introduction to Engineering	3	ENR 318 Engineering Thermal Science	3
& CHE 208D					
Accelerated General Chemistry and Accelerated General					
Chemistry Lab					
MAT 223 Multivariable Calculus	3			PHY 312	4
				<u>&amp; PHY 313</u>	
				Modern Physics and Modern Physics Lab	
PHY 302	4			Artistic Experience (A) course	0-3
<u>&amp; PHY 303</u>					
Electronics and Electronics Lab					
GES 246 Humanities IV: Modern and Contemporary Western Culture	4			World Cultures (U) course	3
				Leisure and Lifetime Sports (Q) course	1
				Cross-cultural Experience (Z) course	0-3
	15		3		11-17
THIRD YEAR			-		_
Fall	Credits	Interim	Credits	Spring	Credits
MAT 224 Differential Equations with Linear Algebra	4	ENR 265 Computer Aided Design and Engineering	3	ENR 304	4
				& ENR 305	
				Engineering Materials and Engineering Materials Lab	
ENR 260 Careers in Engineering and Physics Seminar	1			ENR 308 Statics and Mechanics of Materials	4
PHY 340 Mechanics	4			ENR 348 Heat Transfer	3
Contemporary Western Life and Thought (L) course	3			ENR 446	4
				& ENR 447	
				Control Systems and Control Systems Lab	
Second Language (S) course	4				
	16		3		15
FOURTH YEAR	10			·	13
Fall	Crodite	Interim	Credits	Spring	Credits
		Comparative Systems (G) course		ENR 352	4
ENR 320 Mathematical Methods in Physics and Engineering	4	Comparative Systems (G) course	3	<u>EINK 352</u> & ENR 353	4
				Computer Methods in Physics and Engineering and Computer	
				Methods in Physics and Engineering Lab	
	-			ENR 358 Design of Mechanical Components and Systems	3
ENR 256 Eurodemontals of Design and Manufacturing				LIVE SSO Design OF Mechanical Components and Systems	
ENR 356 Fundamentals of Design and Manufacturing	3			END 350 Design of Machanical Components and Sustained Lab	
ENR 402 Mechanical Systems and Measurements Lab	3			ENR 359 Design of Mechanical Components and Systems Lab	
ENR 402 Mechanical Systems and Measurements Lab ENR 422				ENR 359 Design of Mechanical Components and Systems Lab ENR 490 Engineering Design Project	
ENR 402 Mechanical Systems and Measurements Lab ENR 422 & ENR 423 Fluid Mechanices and Fluid Mechanics Lab	3			ENR 490 Engineering Design Project	
ENR 402 Mechanical Systems and Measurements Lab ENR 422 & ENR 423 Fluid Mechanices and Fluid Mechanics Lab ENR 465 Engineering Design Seminar	3 4 1			ENR 490 Engineering Design Project Science, Technology, and Society (K) course	3
ENR 402 Mechanical Systems and Measurements Lab ENR 422 & ENR 423 Fluid Mechanices and Fluid Mechanics Lab	3 4 1 3			ENR 490 Engineering Design Project Science, Technology, and Society (K) course Contemporary Christian Issues (P) course	3 3 3
ENR 402 Mechanical Systems and Measurements Lab ENR 422 & ENR 423 Fluid Mechanices and Fluid Mechanics Lab ENR 465 Engineering Design Seminar	3 4 1		3	ENR 490 Engineering Design Project Science, Technology, and Society (K) course Contemporary Christian Issues (P) course	3

1. Students must complete through the second semester of a first year language course or equivalent. (Check the catalog for details of this option.)

Most financial aid packages stipulate 12 credits/semester; Minnesota state grants are reduced when credit load falls below 15 credits/semester. (Interim credits may be split between fall and spring for state grant purposes only.)