B.S. in Mechanical Engineering 2019-2020: Option 1 - CWILT

FIRST YEAR			
Fall	Credits Interim	Credits Spring	Credits
GES 130Christianity Western Culture	4 ENR 160Introduction to Engineering	3 GES 140Introduction to Wellbeing	3
GES 160 Inquiry Seminar	3	COS 205 Scientific Computing	3
MAT 124MCalculus 1	4	MAT 125 Calculus 2	
PHY 292	4	PHY 296	
& PHY 292D		& PHY 297	
General Physics I and General Physics I Lab		General Physics II and General Physics II Lab	
		Artistic Experience (A) course	0-3
	15	3	14-17
SECOND YEAR	13	3	14-17
Fall	Credits Interim	Cradita Carina	Credits
		Credits Spring	Credits
BIB 101Introduction to the Bible	3 GES 125Introduction to the Creative Arts	4 <u>ENR 304</u>	2
		<u>& ENR 305</u>	
		Engineering Materials and Engineering Materials Lab	
<u>CHE 208</u>	4	ENR 308 Statics and Mechanics of Materials	4
<u>& CHE 208D</u>			
Accelerated General Chemistry and Accelerated General			
Chemistry Lab			
ENR 260 Careers in Engineering and Physics Seminar	1	PHY 312	2
		& PHY 313	
		Modern Physics and Modern Physics Lab	
MAT 223Multivariable Calculus	3	Contemporary Western Life and Thought (L) course	3
PHY 302	4	World Cultures (U) course	3
& PHY 303		Trona Salaros (5) Sourse	
Electronics and Electronics Lab			
Electronics and Electronics Lab	45		44
THE VEAR	15	4	18
THIRD YEAR			0 111
Fall	Credits Interim	Credits Spring	Credits
ENR 356Fundamentals of Design and Manufacturing	3 ENR 328Computer Aided Design and Engineering	3 <u>ENR 318</u>	4
		<u>& ENR 447</u>	
		Engineering Thermal Science and Control Systems Lab	
ENR 402Mechanical Systems and Measurements Lab	3	ENR 352	4
		<u>& ENR 353</u>	
		Computer Methods in Physics and Engineering and Computer	
		Methods in Physics and Engineering Lab	
MAT 224Differential Equations with Linear Algebra	4	ENR 358	
		<u>& ENR 359</u>	
		Design of Mechanical Components and Systems and Design of	
		Mechanical Components and Systems Lab	
		iviectianical Components and Systems Lab	
PHY 340Mechanics	4		0-3
	4 3	Cross-cultural Experience (Z) course	0-3
PHY 340Mechanics THE 201 Christian Theology	3	Cross-cultural Experience (Z) course Leisure and Lifetime Sports (Q) course	1
THE 201 Christian Theology		Cross-cultural Experience (Z) course	0-3 1 13-16
THE 201 Christian Theology FOURTH YEAR	3 17	Cross-cultural Experience (Z) course Leisure and Lifetime Sports (Q) course 3	13-16
THE 201 Christian Theology FOURTH YEAR Fall	3 17 Credits Interim	Cross-cultural Experience (Z) course Leisure and Lifetime Sports (Q) course 3 Credits Spring	1
THE 201 Christian Theology FOURTH YEAR	3 17	Cross-cultural Experience (Z) course Leisure and Lifetime Sports (Q) course 3 Credits Spring 3 ENR 446	13-16
THE 201 Christian Theology FOURTH YEAR Fall	3 17 Credits Interim	Cross-cultural Experience (Z) course Leisure and Lifetime Sports (Q) course 3 Credits Spring 3 ENR 446 8 ENR 447	13-16
THE 201 Christian Theology FOURTH YEAR Fall ENR 320Mathematical Methods in Physics and Engineering	3 17 Credits Interim 4 Comparative Systems (G) course	Cross-cultural Experience (Z) course Leisure and Lifetime Sports (Q) course 3 Credits Spring 3 ENR 446 8 ENR 447 Control Systems and Control Systems Lab	13-16 Credits
THE 201 Christian Theology FOURTH YEAR Fall ENR 320Mathematical Methods in Physics and Engineering ENR 422	3 17 Credits Interim	Cross-cultural Experience (Z) course Leisure and Lifetime Sports (Q) course 3 Credits Spring 3 ENR 446 8 ENR 447	13-16
THE 201 Christian Theology FOURTH YEAR Fall ENR 320Mathematical Methods in Physics and Engineering ENR 422 & ENR 423	3 17 Credits Interim 4 Comparative Systems (G) course	Cross-cultural Experience (Z) course Leisure and Lifetime Sports (Q) course 3 Credits Spring 3 ENR 446 8 ENR 447 Control Systems and Control Systems Lab	13-16 Credits
THE 201 Christian Theology FOURTH YEAR Fall ENR 320Mathematical Methods in Physics and Engineering ENR 422 & ENR 423	3 17 Credits Interim 4 Comparative Systems (G) course	Cross-cultural Experience (Z) course Leisure and Lifetime Sports (Q) course 3 Credits Spring 3 ENR 446 8 ENR 447 Control Systems and Control Systems Lab	13-16 Credits
FOURTH YEAR Fall ENR 320Mathematical Methods in Physics and Engineering ENR 422 & ENR 423 Fluid Mechanics and Fluid Mechanics Lab	3 17 Credits Interim 4 Comparative Systems (G) course	Cross-cultural Experience (Z) course Leisure and Lifetime Sports (Q) course 3 Credits Spring 3 ENR 446 8 ENR 447 Control Systems and Control Systems Lab	13-16 Credits
FOURTH YEAR Fall ENR 320Mathematical Methods in Physics and Engineering ENR 422 & ENR 423 Fluid Mechanics and Fluid Mechanics Lab ENR 465Engineering Design Seminar	3 17 Credits Interim 4 Comparative Systems (G) course 4	Cross-cultural Experience (Z) course Leisure and Lifetime Sports (Q) course 3 Credits Spring 3 ENR 446 8 ENR 447 Control Systems and Control Systems Lab ENR 348 Heat Transfer ENR 490Engineering Design Project	13-16 Credits 2
THE 201 Christian Theology FOURTH YEAR Fall ENR 320Mathematical Methods in Physics and Engineering ENR 422 & ENR 423 Fluid Mechanics and Fluid Mechanics Lab ENR 465Engineering Design Seminar Interpreting Biblical Themes (J) course	Credits Interim 4 Comparative Systems (G) course 4	Cross-cultural Experience (Z) course Leisure and Lifetime Sports (Q) course 3 Credits Spring 3 ENR 446 8 ENR 447 Control Systems and Control Systems Lab ENR 348 Heat Transfer ENR 490Engineering Design Project Science, Technology, and Society (K) course	13-16 Credits 2
THE 201 Christian Theology FOURTH YEAR Fall	3 17 Credits Interim 4 Comparative Systems (G) course 4	Cross-cultural Experience (Z) course Leisure and Lifetime Sports (Q) course 3 Credits Spring 3 ENR 446 8 ENR 447 Control Systems and Control Systems Lab ENR 348 Heat Transfer ENR 490Engineering Design Project	13-16 Credits 2

^{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.)

B.S. in Mechanical Engineering 2019-2020: Option 2 - Humanities

FIRST YEAR					
Fall	Credits	Interim	Credits	Spring	Credits
BIB 101Introduction to the Bible	3	GES 147Humanities II: Renaissance and Reformation	4	COS 205 Scientific Computing	3
GES 145Humanities I: Greco-Roman through Middle Ages	4			GES 140Introduction to Wellbeing	3
MAT 124MCalculus 1	4			GES 244Humanities III: European Enlightenment and American	4
				Culture to 1877	
PHY 292	4			MAT 125 Calculus 2	4
<u>& PHY 292D</u>					
General Physics I and General Physics I Lab					
				PHY 296	4
				<u>& PHY 297</u>	
				General Physics II and General Physics II Lab	
	15		4		18
SECOND YEAR					
Fall	Credits	Interim	Credits	Spring	Credits
CHE 208	4	ENR 160Introduction to Engineering	3	ENR 304	4
<u>& CHE 208D</u>				<u>& ENR 305</u>	
Accelerated General Chemistry and Accelerated General				Engineering Materials and Engineering Materials Lab	
Chemistry Lab					
ENR 260 Careers in Engineering and Physics Seminar	1			ENR 308 Statics and Mechanics of Materials	4
GES 246Humanities IV: Modern and Contemporary Western Culture	4			PHY 312	4
				<u>& PHY 313</u>	
				Modern Physics and Modern Physics Lab	
MAT 223Multivariable Calculus	3			World Cultures (U) course	3
PHY 302	4			Leisure and Lifetime Sports (Q) course	1
<u>& PHY 303</u>					
Electronics and Electronics Lab					
	16		3		16
THIRD YEAR					
Fall		Interim		Spring	Credits
ENR 356Fundamentals of Design and Manufacturing		ENR 328Computer Aided Design and Engineering	3	ENR 318Engineering Thermal Science	3
MAT 224Differential Equations with Linear Algebra	4			ENR 352	4
				<u>& ENR 353</u>	
				Computer Methods in Physics and Engineering and Computer	
DUNY 2 4 0 4 4	4			Methods in Physics and Engineering Lab	4
PHY 340Mechanics	4			ENR 358 & ENR 359	4
				Design of Mechanical Components and Systems and Design	
				of Mechanical Components and Systems Lab	
ENR 402Mechanical Systems and Measurements Lab	3			Interpreting Biblical Themes (J) course	3
ENN 4021Vicenamear Systems and Weasarements Lab	0			Science, Technology, and Society (K) course	3
	14		3		17
FOURTH YEAR	14		3		17
Fall	Credits	Interim	Credits	Spring	Credits
ENR 320Mathematical Methods in Physics and Engineering		Comparative Systems (G) course		ENR 348 Heat Transfer	3
ENR 422	4	Comparative dystems (0) course	3	ENR 446	4
<u>ENR 422</u> & ENR 423	4			& ENR 447	4
Fluid Mechanics and Fluid Mechanics Lab				Control Systems and Control Systems Lab	
ENR 465Engineering Design Seminar	1			ENR 490Engineering Design Project	3
Second Language (S) course ¹	4			Artistic Experience (A) course	0-3
Cross-cultural Experience (Z) course	0-3			Contemporary Christian Issues (P) course	3
01000 cultural Experience (2) course	13-16		3		13-16
Total Credits 135-141	13-16		3		13-16

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

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