## B.S. in Chemistry 2020-2021 Option 1 - CWILT

FIRST YEAR Fall	Credite	Interim	Credits	Spring	Credit
CHE 113		GES 125 Introduction to the Creative Arts		CHE 214	Orean
& CHE 113D		GES 125 INCOUCEUM TO THE CICALIVE ALES		& CHE 215	
General Chemistry I and General Chemistry I Lab *1				(or elective) General Chemistry II General Chemistry II Lab *1	
OR				MAT 125 Calculus 2	
CHE 208				CHE 200 Laboratory Safety and Chemical Hygiene	
& CHE 208D				CHE 200 Editoria Streety and Chemical Hygiene	
Accelerated General Chemistry and Accelerated General Chemistry Lab *1					
MAT 124M Calculus 1	4			BIB 101 Introduction to the Bible	
GES 130 Christianity Western Culture	4			GES 140 Introduction to Wellbeing	
GES 160 Inquiry Seminar	3				
	15		4		1
SECOND YEAR					
Fall	Credits	Interim	Credits	Spring	Credit
CHE 224		Elective		CHE 226	
& CHE 225				& CHE 227	
Organic Chemistry I and Organic Chemistry I Lab				Organic Chemistry II and Organic Chemistry II Lab	
MAT 222 or 223 Differential Equations	3			PHY 296	
				& PHY 297	
				General Physics II and General Physics II Lab	
PHY 292	4			THE 201 Christian Theology	
& PHY 292D					
General Physics I and General Physics I Lab					
Second Language (S) course *2	4			Contemporary Western Life and Thought (L) course	
	15		3		1
THIRD YEAR					
Fall	Credits	Interim	Credits	Spring	Credit
CHE 395 Chemistry Seminar: Research and Professional Development	1	Science, Technology, and Society (K) course	3	CHE 312	
				& CHE 313	
				Quantitative Analysis and Quantitative Analysis Lab	
	4			CHE 348	
CHE 344	4			0.000	
<u>&amp; CHE 345</u>	4			& CHE 349	
& CHE 345 Thermodynamics, Kinetics, and Statistical Mechanics and Thermodynamics,	4			Quantum Chemistry and Spectroscopy and Quantum Chemistry and	
<u>&amp; CHE 345</u>	4				
& CHE 345 Thermodynamics, Kinetics, and Statistical Mechanics and Thermodynamics, Kinetics, and Statistical Mechanics Lab				Quantum Chemistry and Spectroscopy and Quantum Chemistry and Spectroscopy Lab	
& CHE 345 Thermodynamics, Kinetics, and Statistical Mechanics and Thermodynamics, Kinetics, and Statistical Mechanics Lab Chemistry Elective	4			Quantum Chemistry and Spectroscopy and Quantum Chemistry and Spectroscopy Lab  CHE 490 Chemistry Seminar: Research	
& CHE 345 Thermodynamics, Kinetics, and Statistical Mechanics and Thermodynamics, Kinetics, and Statistical Mechanics Lab Chemistry Elective Interpreting Biblical Themes (J) course	3			Quantum Chemistry and Spectroscopy and Quantum Chemistry and Spectroscopy Lab  CHE 490 Chemistry Seminar: Research  Comparative Systems (G) course  Leisure and Lifetime Sports (Q) course	
& CHE 345 Thermodynamics, Kinetics, and Statistical Mechanics and Thermodynamics, Kinetics, and Statistical Mechanics Lab Chemistry Elective Interpreting Biblical Themes (J) course	4			Quantum Chemistry and Spectroscopy and Quantum Chemistry and Spectroscopy Lab  CHE 490 Chemistry Seminar: Research  Comparative Systems (G) course  Leisure and Lifetime Sports (Q) course	
& CHE 345 Thermodynamics, Kinetics, and Statistical Mechanics and Thermodynamics, Kinetics, and Statistical Mechanics Lab Chemistry Elective Interpreting Biblical Thermes (J) course World Cultures (U) course  FOURTH YEAR Fall	4 3 3 15	Interim	3 Credits	Quantum Chemistry and Spectroscopy and Quantum Chemistry and Spectroscopy Lab  CHE 490 Chemistry Seminar: Research  Comparative Systems (G) course  Leisure and Lifetime Sports (Q) course  Spring	1 Credit
RCHE 345 Thermodynamics, Kinetics, and Statistical Mechanics and Thermodynamics, Kinetics, and Statistical Mechanics Lab Chemistry Elective Interpreting Biblical Themes (J) course World Cultures (U) course  FOURTH YEAR Fall CHE 320	4 3 3 15		3 Credits	Quantum Chemistry and Spectroscopy and Quantum Chemistry and Spectroscopy Lab  CHE 490 Chemistry Seminar: Research  Comparative Systems (G) course  Leisure and Lifetime Sports (Q) course  Spring  CHE 364	
& CHE 345 Thermodynamics, Kinetics, and Statistical Mechanics and Thermodynamics, Kinetics, and Statistical Mechanics Lab Chemistry Elective Interpreting Biblical Themes (J) course World Cultures (U) course  FOURTH YEAR Fall CHE 320 & CHE 321	4 3 3 15	Interim	3 Credits	Quantum Chemistry and Spectroscopy and Quantum Chemistry and Spectroscopy Lab  CHE 490 Chemistry Seminar: Research  Comparative Systems (G) course  Leisure and Lifetime Sports (Q) course  Spring  CHE 364  & CHE 365	1 Credit
& CHE 345 Thermodynamics, Kinetics, and Statistical Mechanics and Thermodynamics, Kinetics, and Statistical Mechanics Lab Chemistry Elective Interpreting Biblical Themes (J) course World Cultures (U) course  FOURTH YEAR Fall CHE 320 & CHE 321 Instrumental Analysis and Instrumental Analysis Lab	4 3 3 15 Credits	Interim Interim Off	3 Credits	Quantum Chemistry and Spectroscopy and Quantum Chemistry and Spectroscopy Lab  CHE 490 Chemistry Seminar: Research  Comparative Systems (G) course  Leisure and Lifetime Sports (Q) course  Spring  CHE 364  & CHE 365  Advanced Inorganic Chemistry and Advanced Inorganic Chemistry Lab	1 Credit
& CHE 345 Thermodynamics, Kinetics, and Statistical Mechanics and Thermodynamics, Kinetics, and Statistical Mechanics Lab Chemistry Elective Interpreting Biblical Themes (J) course World Cultures (U) course  FOURTH YEAR Fall CHE 320 & CHE 321 Instrumental Analysis and Instrumental Analysis Lab CHE 388	4 3 3 15	Interim Interim Off	3 Credits	Quantum Chemistry and Spectroscopy and Quantum Chemistry and Spectroscopy Lab  CHE 490 Chemistry Seminar: Research  Comparative Systems (G) course  Leisure and Lifetime Sports (Q) course  Spring  CHE 364  & CHE 365	1 Credit
& CHE 345 Thermodynamics, Kinetics, and Statistical Mechanics and Thermodynamics, Kinetics, and Statistical Mechanics Lab Chemistry Elective Interpreting Biblical Themes (J) course World Cultures (U) course  FOURTH YEAR Fall CHE 320 & CHE 321 Instrumental Analysis and Instrumental Analysis Lab CHE 389	4 3 3 15 Credits	Interim Interim Off	3 Credits	Quantum Chemistry and Spectroscopy and Quantum Chemistry and Spectroscopy Lab  CHE 490 Chemistry Seminar: Research  Comparative Systems (G) course  Leisure and Lifetime Sports (Q) course  Spring  CHE 364  & CHE 365  Advanced Inorganic Chemistry and Advanced Inorganic Chemistry Lab	1 Credit
& CHE 345 Thermodynamics, Kinetics, and Statistical Mechanics and Thermodynamics, Kinetics, and Statistical Mechanics Lab Chemistry Elective Interpreting Biblical Themes (J) course World Cultures (U) course  FOURTH YEAR Fall CHE 320 & CHE 321 Instrumental Analysis and Instrumental Analysis Lab CHE 388 & CHE 389 Biochemistry I and Biochemistry I Lab	4 3 3 3 15 Credits 4	Interim Interim Off	Credits 0	Quantum Chemistry and Spectroscopy and Quantum Chemistry and Spectroscopy Lab CHE 490 Chemistry Seminar: Research Comparative Systems (G) course Leisure and Lifetime Sports (Q) course  Spring CHE 364 & CHE 365 Advanced Inorganic Chemistry and Advanced Inorganic Chemistry Lab CHE 494 Chemistry Seminar: Research Presentation	1 Credit
& CHE 345 Thermodynamics, Kinetics, and Statistical Mechanics and Thermodynamics, Kinetics, and Statistical Mechanics Lab Chemistry Elective Interpreting Biblical Themes (J) course World Cultures (U) course  FOURTH YEAR Fall CHE 320 & CHE 321 Instrumental Analysis and Instrumental Analysis Lab CHE 388 & CHE 389 Biochemistry I and Biochemistry I Lab Cross-cultural Experience (Z) course	4 4 3 3 3 3 15 Credits 4 4 4 0-3	Interim Interim Off	Credits 0	Quantum Chemistry and Spectroscopy and Quantum Chemistry and Spectroscopy Lab CHE 490 Chemistry Seminar: Research Comparative Systems (G) course Leisure and Lifetime Sports (Q) course  Spring CHE 364 & CHE 365 Advanced Inorganic Chemistry and Advanced Inorganic Chemistry Lab CHE 494 Chemistry Seminar: Research Presentation  Chemistry Elective	1 Credit
& CHE 345 Thermodynamics, Kinetics, and Statistical Mechanics and Thermodynamics, Kinetics, and Statistical Mechanics Lab Chemistry Elective Interpreting Biblical Themes (J) course World Cultures (U) course  FOURTH YEAR Fall CHE 320 & CHE 321 Instrumental Analysis and Instrumental Analysis Lab CHE 388 & CHE 389 Biochemistry I and Biochemistry I Lab	4 3 3 3 15 Credits 4	Interim Interim Off	3 Credits	Quantum Chemistry and Spectroscopy and Quantum Chemistry and Spectroscopy Lab CHE 490 Chemistry Seminar: Research Comparative Systems (G) course Leisure and Lifetime Sports (Q) course  Spring CHE 364 & CHE 365 Advanced Inorganic Chemistry and Advanced Inorganic Chemistry Lab CHE 494 Chemistry Seminar: Research Presentation  Chemistry Elective Artistic Experience (A) course	1 Credit
& CHE 345 Thermodynamics, Kinetics, and Statistical Mechanics and Thermodynamics, Kinetics, and Statistical Mechanics Lab Chemistry Elective Interpreting Biblical Themes (J) course World Cultures (U) course  FOURTH YEAR Fall CHE 320 & CHE 321 Instrumental Analysis and Instrumental Analysis Lab CHE 388 & CHE 389 Biochemistry I and Biochemistry I Lab Cross-cultural Experience (Z) course	4 4 3 3 3 3 15 Credits 4 4 4 0-3	Interim Interim Off	3 Credits	Quantum Chemistry and Spectroscopy and Quantum Chemistry and Spectroscopy Lab CHE 490 Chemistry Seminar: Research Comparative Systems (G) course Leisure and Lifetime Sports (Q) course  Spring CHE 364 & CHE 365 Advanced Inorganic Chemistry and Advanced Inorganic Chemistry Lab CHE 494 Chemistry Seminar: Research Presentation  Chemistry Elective Artistic Experience (A) course Contemporary Christian Issues (P) course	1 Credit

<sup>\*1.</sup> CHE 208CHE 208D is a one-semester course that meets the requirements of CHE 113/CHE 113D and CHE 214/CHE 215. Students taking CHE 208/CHE 208D may choose an elective in the Spring of their Freshman year.

This program assumes that a student will use <u>CHE 113/CHE 113D</u> or <u>CHE 208/CHE 208D</u> and <u>MAT 124M</u> to meet the General Education Laboratory Science (D) and Mathematics (M) course requirements. 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.)

<sup>\*2.</sup> Students must complete through the second semester of a first year language course or equivalent (Check the catalog for details of this option.)

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

FIRST YEAR Fall	Credits	Interim	Credits	Spring	Credi
CHE 113		GES 147 Humanities II: Renaissance and Reformation		CHE 214	
& CHE 113D		oco 1 i i i i i i i i i i i i i i i i i i		& CHE 215	
General Chemistry I and General Chemistry I Lab *1				(or elective) General Chemistry II General Chemistry II Lab *1	
OR				MAT 125 Calculus 2	
	_				
CHE 208				GES 244 Humanities III: European Enlightenment and American Culture	
& CHE 208D				<u>to 1877</u>	
Accelerated General Chemistry and Accelerated General Chemistry Lab *1					
MAT 124M Calculus 1	4			Second Language (S) course *2	
GES 140 Introduction to Wellbeing	3				
GES 145 Humanities I: Greco-Roman through Middle Ages	4				
OLD 145 Humanides I. Oreco Noman chrough Wildule Ages	15		4		
	13		"		
SECOND YEAR					
SECOND YEAR Fall	Credits	Interim	Credits	Spring	Cred
CHE 224		World Cultures (U) course		BIB 101 Introduction to the Bible	5.00
& CHE 225	'	.,		SIS TOT THE GRACE OF TO THE DIDIE	
Organic Chemistry I and Organic Chemistry I Lab					
MAT 222 or 223 Differential Equations	3			CHE 200 Laboratory Safety and Chemical Hygiene	
PHY 292	4			CHE 226	
<u>PHY 292</u> & PHY 292D	"			& CHE 227	
& PHY 292D General Physics I and General Physics I Lab				& CHE 227 Organic Chemistry II and Organic Chemistry II Lab	
	4				
GES 246 Humanities IV: Modern and Contemporary Western Culture	4			PHY 296	
				<u>&amp; PHY 297</u>	
				General Physics II and General Physics II Lab	
				Elective	
	15		3		
THIRD YEAR					
Fall	Credits	Interim	Credits	Spring	Credi
CHE 344	4	Science, Technology, and Society (K) course		CHE 312	
& CHE 345				& CHE 313	
Thermodynamics, Kinetics, and Statistical Mechanics and Thermodynamics,				Quantitative Analysis and Quantitative Analysis Lab	
CHE 395 Chemistry Seminar: Research and Professional Development	1			CHE 348	
CHE 535 CHEMISELY SEMINION RESERVED AND THE CHESTONIA DETECTION.				& CHE 349	
				Quantum Chemistry and Spectroscopy and Quantum Chemistry and	
				Spectroscopy Lab	
Interpreting Biblical Themes (J) course	3			CHE 490 Chemistry Seminar: Research	
Electives	8			Comparative Systems (G) course	
				Leisure and Lifetime Sports (Q) course	
			3		
	16				
FOURTH YEAR	16				
			Candit	Spring	Cucit
Fall	Credits	Interim	Credits		Cred
Fall CHE 320	Credits			CHE 364	Credi
CHE 320 & CHE 321	Credits	Interim		CHE 364 & CHE 365	Cred
CHE 320 & CHE 321 Instrumental Analysis and Instrumental Analysis Lab	Credits 4	Interim		CHE 364  & CHE 365  Advanced Inorganic Chemistry and Advanced Inorganic Chemistry Lab	Cred
Fall CHE 320 & CHE 321 Instrumental Analysis Lab CHE 388	Credits	Interim		CHE 364 & CHE 365	Credi
CHE 320 & CHE 321 Instrumental Analysis and Instrumental Analysis Lab CHE 388 & CHE 389	Credits 4	Interim		CHE 364  & CHE 365  Advanced Inorganic Chemistry and Advanced Inorganic Chemistry Lab	Cred
CHE 320 & CHE 321 Instrumental Analysis and Instrumental Analysis Lab CHE 388 & CHE 389 Biochemistry I and Biochemistry I Lab	Credits 4	Interim Interim Off		CHE 364  & CHE 365 Advanced Inorganic Chemistry and Advanced Inorganic Chemistry Lab  CHE 494 Chemistry Seminar: Research Presentation	Cred
Fall  CHE 320 & CHE 321 Instrumental Analysis and Instrumental Analysis Lab  CHE 388 & CHE 389 Biochemistry I and Biochemistry I Lab  Chemistry Elective	Credits 4	Interim Interim Off		CHE 364  & CHE 365 Advanced Inorganic Chemistry and Advanced Inorganic Chemistry Lab  CHE 494 Chemistry Seminar: Research Presentation  Chemistry Elective	
Fall CHE 320 & CHE 321 Instrumental Analysis and Instrumental Analysis Lab CHE 388 & CHE 389 Blochemistry I and Biochemistry I Lab Chemistry Elective	Credits 4	Interim Interim Off		CHE 364 & CHE 365 Advanced Inorganic Chemistry and Advanced Inorganic Chemistry Lab CHE 494 Chemistry Seminar: Research Presentation Chemistry Elective Artistic Experience (A) course	Cred
Fall CHE 320 & CHE 321 Instrumental Analysis and Instrumental Analysis Lab CHE 388 & CHE 389 Blochemistry I and Biochemistry I Lab Chemistry Elective	Credits 4	Interim Interim Off		CHE 364  & CHE 365 Advanced Inorganic Chemistry and Advanced Inorganic Chemistry Lab  CHE 494 Chemistry Seminar: Research Presentation  Chemistry Elective	
FOURTH YEAR  Fall  CHE 320  & CHE 321 Instrumental Analysis and Instrumental Analysis Lab  CHE 388  & CHE 389  Biochemistry I and Biochemistry I Lab  Chemistry Elective  Cross Cultural Experience (Z) course	Credits 4	Interim Interim Off		CHE 364 & CHE 365 Advanced Inorganic Chemistry and Advanced Inorganic Chemistry Lab CHE 494 Chemistry Seminar: Research Presentation Chemistry Elective Artistic Experience (A) course Contemporary Christian Issues (P) course	

<sup>\*1.</sup> CHE 208/CHE 208D is a one-semester course that meets the requirements of CHE 113/CHE 113D and CHE 214/CHE 215. Students taking CHE 208/CHE 208D may choose an elective in the Spring of their Freshman year.

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