B.S. in Applied Physics (Optics Emphasis) 2023-2024: Option 1 - CWILT

FIRST YEAR						
Fall (odd)	Credits	January Session	Credits	Spring (even)	Credits	
PHY 292	4	GES 125 Introduction to the Creative Arts	4	PHY 296	4	
& PHY 292D				& PHY 297		
General Physics I and General Physics I Lab				General Physics II and General Physics II Lab		
MAT 124M1 Calculus 1	4			GES 130 Christianity Western Culture	4	
BIB 101 Introduction to the Bible	3			GES 140 Introduction to Wellbeing	2	
GES 160 Inquiry Seminar	3			MAT 125 Calculus 2	4	
	14		**4**		**14**	32
SECOND YEAR						
Fall (even)	Credits	January Session	Credits	Spring (odd)	Credits	
PHY 302	4	World Cultures (U) course	3	PHY 312	4	
& PHY 303				& PHY 313		
Electronics and Electronics Lab				Modern Physics and Modern Physics Lab		
COS 205 Scientific Computing	3			PHY 352	4	
MAT 223 Multivariable Calculus	3			& PHY 353		
PHY 260 Careers in Engineering and Physics Seminar	1			Computer Methods in Physics and Engineering and Computer Methods in Physics and Engineering Lab		
Second Language (S) course *1	4			MAT 222 Differential Equations	3	
				Contemporary Western Life and Thought (L) course	3	
	15		3		**14**	32
THIRD YEAR						
Fall (odd)	Credits	January Session	Credits	Spring (even)	Credits	
PHY 320 Mathematical Methods in Physics and	4	Science, Technology, and Society (K) course	3	PHY 365 Physics Research Seminar	1	
CHE 113	4			CHE 214	4	
& CHE 113D				CHE 215		
General Chemistry I and General Chemistry I Lab				General Chemistry II and General Chemistry II Lab		
PHY 400 Electricity and Magnetism	4			PHY 332	4	
THE 201 Christian Theology	3			& PHY 333		
				Optics and Optics Lab		
				Comparative Systems (G) course	3	
				Interpreting Biblical themes (J) course	3	
	15		**3**		**15**	33
FOURTH YEAR						
Fall (even)	Credits	January Session	Credits	Spring (odd)	Credits	
PHY 440 Quantum Mechanics	4			PHY 432	4	
PHY 340 Mechanics	4			& PHY 433		
Contemporary Christian Issues (P) course	3			Laser Fundamentals		
Elective	4			PHY 490 Research	4	
Cross-Cultural Experience (Z) course	0-3			Elective	4	
				Artistic Experience (A) course	0-3	
	15-18		**0**		**12-15**	27
Total Credits 124-130						124

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

This program assumes a student will use MAT 124M and PHY 292/PHY 292D to meet the General Education Mathematics (M) course and Laboratory Science (D) course requirements.

Most financial aid packages stipulate 12 credits/term; Minnesota state grants are reduced when credit load falls below 15 credits/semester. January Session credits are counted as part of Spring Term.

B.S. in Applied Physics (Optics Emphasis) 2023-2024: Option 2 - Humanities

FIRST YEAR						
Fall (odd)	**Credits**	**January Session**	**Credits**	**Spring (even)**	**Credits**	
PHY 292	4	GES 147 Humanities II: Renaissance and Reformation	4	PHY 296	4	
& PHY 292D				& PHY 297		
General Physics I and General Physics I Lab				General Physics II and General Physics II Lab		
MAT 124M1 Calculus 1	4			GES 244 Humanities III: European Enlightenment and American Culture to 1877	4	
BIB 101 Introduction to the Bible	3					
GES 145 Humanities I: Greco-Roman through Middle	4			GES 140 Introduction to Wellbeing	2	
				MAT 125 Calculus 2	4	
	15		**4**		**14**	33
SECOND YEAR						
Fall (even)	**Credits**	**January Session**	**Credits**	**Spring (odd)**	**Credits**	
PHY 302	4	World Cultures (U) course	3	PHY 312	4	
& PHY 303				& PHY 313		
Electronics and Electronics Lab				Modern Physics and Modern Physics Lab		
GES 246 Humanities IV: Modern and Contemporary Western Culture	4			PHY 352	4	
				& PHY 353		
COS 205 Scientific Computing	3			Computer Methods in Physics and Engineering and Computer Methods in Physics and Engineering Lab		
MAT 223 Multivariable Calculus	3			MAT 222 Differential Equations	3	
PHY 260 Careers in Engineering and Physics Seminar	1			Second Language (S) course *1	4	
	15		3		**15**	33
THIRD YEAR						
Fall (odd)	**Credits**	**January Session**	**Credits**	**Spring (even)**	**Credits**	
PHY 320 Mathematical Methods in Physics and	4	Science, Technology, and Society (K) course	3	PHY 365 Physics Research Seminar	1	
CHE 113	4			CHE 214	4	
& CHE 113D				CHE 215		
General Chemistry I and General Chemistry I Lab				General Chemistry II and General Chemistry II Lab		
PHY 400 Electricity and Magnetism	4			PHY 332	4	
				& PHY 333		
				Optics and Optics Lab		
				Comparative Systems (G) course	3	
				Interpreting Biblical themes (J) course	3	
	12		**3**		**15**	30
FOURTH YEAR						
Fall (even)	**Credits**	**January Session**	**Credits**	**Spring (odd)**	**Credits**	
PHY 440 Quantum Mechanics	4			PHY 432	4	
PHY 340 Mechanics	4			& PHY 433		
Contemporary Christian Issues (P) course	3			Laser Fundamentals		
Elective	3			PHY 490 Research	4	
Cross-Cultural Experience (Z) course	0-3			Elective	4	
				Artistic Experience (A) course	0-3	
	14-17		**0**		**12-15**	26
Total Credits 122-128						122

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

This program assumes a student will use MAT 124M and PHY 292/PHY 292D to meet the General Education Mathematics (M) course and Laboratory Science (D) course requirements.

Most financial aid packages stipulate 12 credits/term; Minnesota state grants are reduced when credit load falls below 15 credits/semester. January Session credits are counted as part of Spring Term.