

B.S. in Applied Physics (Optics Emphasis) 2016-2017: Option 1 - CWILT

First Year					
Fall	Credits	Interim	Credits	Spring	Credits
PHY292 & 292D General Physics I and General Physics Lab *1	4	GES125 Introduction to the Creative Arts	4	PHY296 & PHY297 General Physics II and General Physics Lab II	4
CHE208 & 208D Accelerated General Chemistry and Accelerated General Chemistry Lab	4			MAT125 Calculus 2	4
GES106 Introduction to Liberal Arts	1			GES130 Christianity Western Culture	4
BIB101 Introduction to the Bible	3			GES110 College Writing	3
Mathematics (M) course	3				
	15		4		15
Second Year					
Fall	Credits	Interim	Credits	Spring	Credits
PHY302 & PHY303 Electronics and Electronics Lab	4	World Cultures (U) course	3	PHY312 & PHY313 Modern Physics and Modern Physics Lab	4
MAT223 Multivariable Calculus	3			PHY352 & PHY353 Computer Methods in Physics and Engineering and Computer Methods in Physics and Engineering Lab	4
COS205 Scientific Computing	3			MAT222 Differential Equations	3
PHY260 Careers in Engineering and Physics Seminar	1			THE201 Christian Theology	3
Nature of Persons (N) course	3			PEA100 Physical Wellness for Life	1
	14		3		15
Third Year					
Fall	Credits	Interim	Credits	Spring	Credits
CHE113 & 113D General Chemistry I and General Chemistry I Lab	4	Contemporary Western Life and Thought (L) course	3	PHY365 Physics Research Seminar	1
PHY400 Electricity and Magnetism	4			PHY332 & PHY333 Optics and Optics Lab	4
Science, Technology, and Society (K) course	3			PHY440 Quantum Mechanics	4
Second Language (S) course2	4			Comparative Systems (G) course	3
	15		3	Interpreting Biblical themes (J) course	3
					15
Fourth Year					
Fall	Credits	Interim	Credits	Spring	Credits
PHY320 Mathematical Methods in Physics and Engineering	4	Interim Off		PHY340 Mechanics	4
Contemporary Christian Issues (P) course	3			PHY432 & PHY433 Topics in Contemporary Optics and Topics in Contemporary Optics Lab	4
PHY490 Research	3			Electives	3
Electives	2			Leisure and Lifetime Sport (Q) course	1
Cross-Cultural Experience (Z) course	0-3			Artistic Experience (A) course	0-3
	12-15		0		12-15
Total Credits: 123-129					

*1 Students may also choose to use this course to meet a General Education requirement.

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

Because of possible double counting between General Education and the major, the actual credit total can be reduced to 122.

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 Applied Physics (Optics Emphasis) 2016-2017: Option 2 - Humanities

First Year					
Fall	Credits	Interim	Credits	Spring	Credits
PHY292 & 292D General Physics I and General Physics Lab *1	4	<u>GES147 Humanities II: Renaissance and Reformation</u>	4	PHY296 & PHY297 General Physics II and General Physics Lab II	4
CHE208 & 208D Accelerated General Chemistry and Accelerated General Chemistry Lab	4			<u>MAT125 Calculus 2</u>	4
<u>GES106 Introduction to Liberal Arts</u>	1			<u>GES244 Humanities III: European Enlightenment and American Culture to 1877</u>	4
<u>GES145 Humanities I: Greco-Roman through Middle Ages</u>	4			<u>BIB101 Introduction to the Bible</u>	3
Mathematics (M) course	3			<u>PEA100 Physical Wellness for Life</u>	1
	16		4		16
Second Year					
Fall	Credits	Interim	Credits	Spring	Credits
PHY302 & PHY303 Electronics and Electronics Lab	4	Nature of Persons (N) course	3	PHY312 & PHY313 Modern Physics and Modern Physics Lab	4
<u>MAT223 Multivariable Calculus</u>	3			PHY352 & PHY353 Computer Methods in Physics and Engineering and Computer Methods in Physics and Engineering Lab	4
<u>COS205 Scientific Computing</u>	3			<u>MAT222 Differential Equations</u>	3
<u>PHY260 Careers in Engineering and Physics Seminar</u>	1			Second Language (S) course ²	4
<u>GES246 Humanities IV: Modern and Contemporary Western Culture</u>	4				
	15		3		15
Third Year					
Fall	Credits	Interim	Credits	Spring	Credits
CHE113 & 113D General Chemistry I and General Chemistry I Lab	4	Science, Technology, and Society (K) course	3	<u>PHY365 Physics Research Seminar</u>	1
<u>PHY400 Electricity and Magnetism</u>	4			PHY332 & PHY333 Optics and Optics Lab	4
Electives	3			<u>PHY440 Quantum Mechanics</u>	4
World Cultures (U) course	3			Interpreting Biblical themes (J) course	3
	14		3		12
Fourth Year					
Fall	Credits	Interim	Credits	Spring	Credits
<u>PHY320 Mathematical Methods in Physics and Engineering</u>	4	Interim Off		<u>PHY340 Mechanics</u>	4
Comparative Systems (G) course	3			PHY432 & PHY433 Topics in Contemporary Optics and Topics in Contemporary	4
Contemporary Christian Issues (P) course	3			Leisure and Lifetime Sport (Q) course	1
<u>PHY490 Research</u>	3			Electives	3
Cross-Cultural Experience (Z) course	0-3			Artistic Experience (A) course	0-3
	13-16		0		12-15
Total Credits: 123-129					

*1 Students may also choose to use this course to meet a General Education requirement.

*2 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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