B.S. IN APPLIED PHYSICS

Major in Applied Physics (B.S.)

PHY260	Careers in Engineering and Physics Seminar	1
PHY292 & 292D	General Physics I and General Physics I Lab [1]	4
PHY296 & PHY297	General Physics II and General Physics II Lab	4
PHY302 & PHY303	Electronics and Electronics Lab	4
PHY312 & PHY313	Modern Physics and Modern Physics Lab	4
PHY320	Mathematical Methods in Physics and Engineering	4
PHY340	Mechanics	4
PHY352 & PHY353	Computer Methods in Physics and Engineering and Computer Methods in Physics and Engineering Lab	4
PHY365	Physics Research Seminar	1
PHY490	Research	3
Choose one of the following:		4
CHE208 & 208D	Accelerated General Chemistry and Accelerated General Chemistry Lab	
CHE214 & CHE215	General Chemistry II and General Chemistry II Lab	
COS205	Scientific Computing	3
MAT125	Calculus 2	4
MAT223	Multivariable Calculus	3
Choose one emphasis		18-24

Major	65-71
General Education	49-50
Electives	8-14
Total Credits	122-135

[1] This course meets a General Education requirement.

Biomedical Emphasis (24 credits)

BIO120 & BIO121	Introduction to Molecular and Cellular Biology and Introduction to Molecular and Cellular Biology Lab	4
BIO214 & BIO215	Human Anatomy and Human Anatomy Lab	4
BIO216 & BIO217	Human Physiology and Human Physiology Lab	4
PHY422 & PHY423	Fluid Mechanics and Fluid Mechanics Lab	4
Choose from one of the following Optics courses:		4
PHY332 & PHY333	Optics and Optics Lab	
PHY432 & PHY433	Topics in Contemporary Optics and Topics in Contemporary Optics Lab	
Choose one of the following courses on properties of materials:		4
PHY400	Electricity and Magnetism	
PHY424 & PHY425	Materials and Devices and Materials and Devices Lab	
Total Credits		24

Computational Emphasis (18 credits)

COS351	High-Performance Computing	3
MAT222	Differential Equations	3
MAT241	Discrete Mathematics	3
MAT330	Probability and Statistics	3
MAT344	Numerical Methods	3
MAT376	Operations Research	4
Total Credits		19

Electronics Emphasis (23 credits)

MAT222	Differential Equations	3
PHY424 & PHY425	Materials and Devices and Materials and Devices Lab	4
PHY400	Electricity and Magnetism	4
Choose one of the following Optical Science courses:		4
PHY332 & PHY333	Optics and Optics Lab	
PHY432 & PHY433	Topics in Contemporary Optics and Topics in Contemporary Optics Lab	
ENR306 & ENR307	Digital Logic and Design and Digital Logic and Design Lab	4
ENR326	Circuit Analysis and Simulation	4
& ENR327	Circuit Analysis and Simulation Lab	
Total Credits		23

Mechanics Emphasis (19 credits)

ENR308	Statics and Mechanics of Materials	4
MAT222	Differential Equations	3
PHY410	Thermodynamics	4
PHY422 & PHY423	Fluid Mechanics and Fluid Mechanics Lab	4
PHY424 & PHY425	Materials and Devices and Materials and Devices Lab	4
Total Credits		19

Optics Emphasis (19 credits)

MAT222	Differential Equations	3
PHY332 & PHY333	Optics and Optics Lab	4
PHY400	Electricity and Magnetism	4
PHY432 & PHY433	Topics in Contemporary Optics and Topics in Contemporary Optics Lab	4
PHY440	Quantum Mechanics	4
Total Credits		19