

PHYSICS COMPREHENSIVE MAJOR: APPLIED PHYSICS/ PRE-ENGINEERING EMPHASIS

The Applied Physics/Pre-Engineering Major requires a minimum of 56 credits:

Code	Title	Credits
Select one of the following pairs of courses: 8		
PHYS 190 & PHYS 185	General Physics I (GT-SC2) and Laboratory Physics I (GT-SC1)	
AND		
PHYS 191 & PHYS 186	General Physics II (GT-SC2) and Laboratory Physics II (GT-SC1)	
OR		
PHYS 170 & PHYS 185	Principles of Physics I (GT-SC2) and Laboratory Physics I (GT-SC1)	
AND		
PHYS 171 & PHYS 186	Principles of Physics II (GT-SC2) and Laboratory Physics II (GT-SC1)	
And the following:		
PHYS 320	Modern Physics	3
PHYS 250	Statics	3
PHYS 251	Dynamics	3
At least twelve credits chosen from the following: 12		
CHEM 451	Physical Chemistry I	
ENGR 363	Mechanics of Solids	
MATH 358	Introduction to Differential Equations and Linear Algebra	
PHYS 330	Classical Mechanics	
PHYS 335	Fluid Mechanics	
PHYS 350	Electricity and Magnetism I	
PHYS 351	Electricity and Magnetism II	
PHYS 452	Quantum Mechanics	
PHYS 462	Astrophysics	
At least two credits of Capstone Experience courses: 2		
PHYS 495	Physics Capstone (may be repeated)	
Minimum supporting courses:		
Either: 3-4		
CHEM 121	General Chemistry for Engineers	
Or both:		
CHEM 111 & CHEM 112	General Chemistry I (GT-SC2) and General Chemistry Laboratory I (GT-SC1)	
CS 190 or CS 191	Computer Science I or Computer Science II	3
And the following:		
ENGR 131	Introduction to Engineering Design	3
ENGR 161	COMPUTER-AIDED DESIGN	3
ENGR 265	Engineering as a Profession	1
MATH 151	Calculus I (GT-MA1)	4

Course	Title	Credits
MATH 251	Calculus II	4
MATH 252	Calculus III	4
Year One		
Fall		
MATH 151	Calculus I (GT-MA1)	4
PHYS 170 or PHYS 190	Principles of Physics I (GT-SC2) or General Physics I (GT-SC2)	3
PHYS 185	Laboratory Physics I (GT-SC1)	1
CS 190 or CS 191	Computer Science I or Computer Science II	3
CHEM 121	General Chemistry for Engineers	3
HWTR 100	First Year Seminar	1
Gen Ed	Area I	3
Credits 18		
Spring		
ENGR 131	Introduction to Engineering Design	3
ENGR 161	COMPUTER-AIDED DESIGN	3
PHYS 171 or PHYS 191	Principles of Physics II (GT-SC2) or General Physics II (GT-SC2)	3
PHYS 186	Laboratory Physics II (GT-SC1)	1
MATH 251	Calculus II	4
Gen Ed	Area III	3
Credits 17		
Year Two		
Fall		
MATH 252	Calculus III	4
PHYS 250	Statics	3
PHYS 320	Modern Physics	3
ENGR 265	Engineering as a Profession	1
Elective	PHYS Elective (upper division)	3
Credits 14		
Spring		
MATH 358	Introduction to Differential Equations and Linear Algebra	4
PHYS 251	Dynamics	3
Elective	PHYS Elective (upper division)	3
Elective	PHYS Elective (upper division)	3
ENG 102	Writing and Rhetoric I (GT-C01)	3
Credits 16		
Year Three		
Fall		
ENG 103	Writing and Rhetoric II (GT-C02)	3
Gen Ed	Area I	3
Gen Ed	Area III	3
Elective	Elective/Minor	3
Elective	Elective/Minor	3
Credits 15		
Spring		
Gen Ed	Area I	3
Gen Ed	Area III	3
Elective	Elective/Minor	3
Elective	Elective/Minor	3
Elective	Elective/Minor	3
Credits 15		
Year Four		
Fall		
PHYS 495	Physics Capstone	1
Elective	Elective/Minor (upper division)	3
Elective	Elective/Minor (upper division)	3
Elective	Elective/Minor (upper division)	3

2 Physics Comprehensive Major: Applied Physics/Pre-Engineering Emphasis

Elective	Elective/Minor (upper division)	3
Elective	Elective/Minor	2
Credits		15
Spring		
PHYS 495	Physics Capstone	1
Elective	Elective/Minor (upper division)	3
Elective	Elective/Minor (upper division)	3
Elective	Elective/Minor (upper division)	3
Elective	Elective/Minor (upper division)	3
Credits		13
Total Credits		123