

Physics B.S./Photonics M.S.

149 credits

(Major Code: PHYPH-BSMS)

Required Undergraduate Courses			
Number	Title	Credits	Perspectives
Phys 145.4	Principles of Physics I	4	AoK: NS
Phys 145.1	Principles of Physics I Laboratory	1	AoK: NS-L
Phys 146.4	Principles of Physics II	4	AoK: NS
Phys 146.1	Principles of Physics II Laboratory	1	AoK: NS-L
Phys 233	Intermediate Methods of Math Physics I	3	
Phys 234	Intermediate Methods of Math Physics II	3	
Phys 235	Classical Physics Laboratory	2	
Phys 237	Mechanics	4	
Phys 243	Thermodynamics (and Statistical Mechanics)	4	
Phys 260	Introduction to Modern Physics	4	
Phys 310	Electromagnetism I	4	
Phys 377	Modern Physics Laboratory	2	
Elective Courses (One course)			
Phys 221	Optoelectronics	3	
Phys 225	Solid State Electronics	4	
Phys 227	Physical Principles of Telecommunications	3	
Phys 265	Electrical Circuits	3	
Phys 320W	Research and Writing in the Sciences	3	
Phys 383	Special Topics	3	
Phys 390	Internship	3	
Phys 393	Special Problems	3	
Phys 396W	Senior Research Project II	3	

Required Graduate Courses			
Number	Title	Credits	Comments
Phys 626	Applied Quantum Mechanics	4	Replaces Phys. 365
Phys 616	Applied Electrodynamics	4	Replaces Phys. 311
Phys 637	Modern Optics	4	Replaces Phys. 222
Phys 646	Physics of Semiconductors	4	Replaces Phys. 345
Phys 661	Computational Methods in Physics	4	
Phys 621	Optoelectronics	4	
Phys 620	Research and Writing in Physical Disciplines	3	
Phys 699	Introduction to Management of Scientific and Engineering Projects	3	
Phys 672	Photonics Laboratory	2	
Phys 680/681	Internship	2	

AoK = Area of Knowledge

NS = Natural Science

NS-L = Natural Science with Lab (only if including the 4 credit related lecture course)

Phys. 798	Final Project	4	
Elective Laboratory Courses (must select one course)			
Phys 671	Modern Physics Laboratory	2	
Phys 673	Microwave Instrumentation Laboratory	2	
Phys. 771 - 773	Graduate Laboratory	2	Can be taken up to 6 credits
Elective Technology Courses (must select one course)			
Phys 623	Principles of Telecommunications	4	
Phys 676	Foundation of Growth Techniques	4	
Phys 675	Intro to Nano and Microfabrication	4	
Phys 622	Physics of Lasers	4	
Phys 390	Internship	3	
Phys 393	Special Problems	3	
Phys 396W	Senior Research Project II	3	

Math Prerequisite (needed for course number in parentheses)

Number	Title	Credit
Math 151 (for Phys 145)	Calculus/ Differentiation & Integration	4
Math 152 (for Phys 146)	Calculus/ Integration & Infinite Series	4
OR		
Math 141 (for Phys 145)	Calculus/Differentiation	3
Math 142 (for Phys 146)	Calculus/Integration	3
Math 201 (for Phys 233)	Calculus	4

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