Bachelor of Science

Physics (BS)

Degree Program Guide

The Degree Program Guide is a suggested curriculum to complete this degree program in four years. It is just one of several plans that will work and is presented only as broad guidance to students. Each student is strongly encouraged to develop a customized plan in consultation with their academic advisor. Additional information can also be found in Degree Works.

Course	Title	Credit Hours
Freshman		
Fall		
ENGL 110C	English Composition (Grade of C or better required)	3
MATH 211	Calculus I	4
CHEM 121N and CHEM 122N		4
Oral Communication		3
Language & Culture I (May be waived; See requirement details)		0-3
	Credit Hours	**14-17**
Spring		
MATH 212	Calculus II	4
Select one of the following:		4
PHYS 261N	Advanced University Physics I	
PHYS 231N	University Physics I	
PHYS 226N	Honors: University Physics I	
CHEM 123N and CHEM 124N		4
Philosophy and Ethics		3
Language & Culture II (May be waived; See requirement details)		0-3
	Credit Hours	**15-18**
Sophomore		
Fall		
MATH 312 or MATH 285		4
Select one of the following:		4
PHYS 262N	Advanced University Physics II	
PHYS 232N	University Physics II	
PHYS 227N	Honors: University Physics II	
ENGL 211C or ENGL 231C (Grade of C or better required)		3
Impact of Technology		3
Select one of the following:		3
CS 120G	Introduction to Information Literacy and Research	
CS 121G	Introduction to Information Literacy and Research for Scientists	
OEAS 130G	Research Skills and Information Literacy for the Natural Sciences	
	Credit Hours	**17**
Spring		
PHYS 319	Analytical Mechanics	3
CS 151 or CS 153	Introduction to Programming with Java or Introduction to Programming with Python	4
MATH 307 or MATH 280		3
Select one of the following:		1-2
PHYS 120	Physics in the 21st Century *	
PHYS 309	Physics on the Back of an Envelope *	
ECE 111	Information Literacy and Research for Electrical and Computer Engineering	
Human Creativity		3
	Credit Hours	**14-15**
Junior		
Fall		
PHYS 355	Mathematical Methods of Physics	3
PHYS 303	Intermediate Experimental Physics	3
PHYS 323	Modern Physics	3
PHYS 425	Electromagnetism I	3
Literature		3
	Credit Hours	**15**
Spring		
PHYS 413	Methods of Experimental Physics	3
PHYS 453	Electromagnetism II *	3
Select one of the following:		3
ASTP 313	Elements of Astrophysics *	
PHYS 411	Introduction to Atomic Physics	
PHYS 415	Introduction to Nuclear and Particle Physics	
PHYS 416	Introduction to Solid State Physics	
PHYS 417	Introduction to Particle Accelerator Physics	
Select one of the following:		3
MATH 316	Introductory Linear Algebra	
MATH 401	Partial Differential Equations	
MATH 421	Applied Mathematics II: Mathematical Modeling	
MATH 422	Applied Complex Variables	
Human Behavior		3
	Credit Hours	**15**
Senior		
Fall		
PHYS 420	Introductory Computational Physics	3
PHYS 452	Introduction to Quantum Mechanics	3
PHYS 489W or PHYS 499W		1-3
Interpreting the Past		3
Upper-Division General Education Course (Option D)		3
Elective (if needed)		3
	Credit Hours	**16-18**
Spring		
PHYS 456	Intermediate Quantum Mechanics *	3

PHYS 454	Thermal and Statistical Physics	3
Select one of the following:		3
ASTP 414	Relativity and Cosmology	
PHYS 411	Introduction to Atomic Physics	
PHYS 415	Introduction to Nuclear and Particle Physics	
PHYS 416	Introduction to Solid State Physics	
PHYS 417	Introduction to Particle Accelerator Physics	
PHYS 490W or PHYS 499W		2-3
Upper-Division General Education Course (Option D)		3
	Credit Hours	**14-15**
	Total Credit Hours	**120-130**

*PHYS 120 and PHYS 420 are offered fall semester only. ASTP 313, PHYS 309, PHYS 453, and PHYS 456 are offered spring semester only.