

Physics Major, B.S.

Department of Physics

The Bachelor of Science (B.S.) degree in Physics is primarily for students planning to work toward an advanced degree in physics or a related area. The physics courses emphasize conceptual foundations, problem-solving skills, and experimental techniques.

Typical Program of Study:

Fall Semester

First Year

Math 1296 Calculus I ^a	5 cr
Comp 1120 College Writing	3 cr
Phys 1021 Exploring Current Topics in Physics	1 cr
Liberal education courses	<u>6 cr</u>
	15 cr

Second Year

Math 3298 Calculus III	4 cr
Phys 2012 General Physics II	4 cr
Phys 2112 Solving Phys Problems II (recommended)	1 cr
Liberal education courses	<u>6 cr</u>
	15 cr

Third Year*

Phys 4001 Classical Mechanics	4 cr
Phys 4021 Quantum Physics II	4 cr
Liberal education or minor field courses	<u>7 cr</u>
	15 cr

Fourth Year*

Phys 3061 Instrumentation	3 cr
Phys 4031 Thermal & Statistical Physics	4 cr
Liberal education or minor field courses	<u>7 cr</u>
	14 cr

Spring Semester

Math 1297 Calculus II	5 cr
CS 1131 Intro to Programming in FORTRAN ^b	3 cr
Phys 2011 General Physics I	4 cr
Phys 2111 Solving Phys Problems I (recommended)	1 cr
Liberal education course	<u>3 cr</u>
	16 cr

Math 3280 Diff Equations/Linear Algebra	4 cr
Phys 2021 Relativity & Quantum Physics	4 cr
Phys 2022 Classical Physics	4 cr
Phys 2033 Classical & Quantum Physics Lab	<u>2 cr</u>
	14 cr

Chem 1151 General Chemistry I ^c	5 cr
Phys 4011 Electromagnetic Theory	4 cr
Liberal education or minor field courses	<u>7 cr</u>
	16 cr

Phys 5061 Experimental Methods	3 cr
Phys 5090 Physics Seminar	1 cr
Comp 3130 or 3150 Advanced Writing	3 cr
Liberal education or minor field courses	<u>8 cr</u>
	15 cr

^a First math course is determined by math placement exam. This schedule presupposes placement into Math 1296.

^b With department approval, another one-semester computer programming course may be substituted for CS 1131.

^c Or Chem 1161 Honors General Chemistry I. A second semester of chemistry is recommended (Chem 1152 or Chem 1162.)

*Courses numbered above 3000 will be offered in alternate years only. Some courses suggested in the junior and senior years may need to be switched to match the course offerings.

For further information:

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Physics Major, B.S.

MAJOR COURSE REQUIREMENTS	CREDITS	PREREQUISITES	SEMESTER TO BE COMPLETED	GRADE
YEAR 1				
Comp 1120 College Writing	3			
CS 1131 Intro to Programming in Fortran ^	3	3.5 yrs HS algebra or Math 1250		
Phys 1021 Exploring Current Topics in Physics	1			
Phys 2011 General Physics I	4	Math 1296		
Phys 2111 Solving Physics Problems I (recommended)	1	Math 1296; concurrent registration in 2011		
Math 1296 Calculus I	5	Math placement or Math 1250		
Math 1297 Calculus II	5	Math 1296		
YEAR 2				
Math 3280 Diff Equations w/ Linear Algebra	4	Math 1297		
Math 3298 Calculus III	4	Math 1297		
Phys 2012 General Physics II	4	Phys 2011		
Phys 2021 Relativity and Quantum Physics	4	Phys 2012		
Phys 2022 Classical Physics	4	Phys 2012		
Phys 2033 Classical & Quantum Physics lab	2	Phys 2021, 2022 (concurrent registration OK)		
Phys 2112 Solving Physics Problems II (recommended)	1	Concurrent registration in Phys 2012		
YEAR 3*				
Chem 1151 General Chemistry I **	4	Math 1296		
Phys 4001 Classical Mechanics	4	Phys 2022 or 2001; Math 3280		
Phys 4011 Electromagnetic Theory	4	Phys 2022 or 1203 or 1205; Math 3280		
Phys 4021 Quantum Physics II	4	Phys 2021; Math 3280		
YEAR 4*				
Comp 3150 Advanced Writing: Science	3	Comp 1120; 60 credits		
Phys 3061 Instrumentation	3	Phys 2022 or 1203 or 1205; 1 sem. programming		
Phys 4031 Thermal & Statistical Physics	3	Phys 2021		
Phys 5061 Experimental Methods	3	Phys 2033; Phys 3061		
Phys 5090 Seminar	1	90 credits		

^ With department approval, another one-semester computer programming course may be substituted for CS 1131.

*Courses numbered above 3000 will be offered in alternate years only. Some courses listed for years 3 and 4 may need to be interchanged to match the course offerings.

** Or Chem 1161 Honors General Chemistry I. A second semester of chemistry is recommended (Chem 1152 or Chem 1162.)

NOTE: In addition to the above requirements, students must complete a minor and the liberal education program to earn a B.S. degree.