

Applied Physics Major, B.S.

Department of Physics

The Bachelor of Science (B.S.) degree in Applied Physics is primarily for students planning to work in industry. The physics courses emphasize conceptual foundations, problem-solving skills, and experimental and computational 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 Probs II (recommended)	1 cr
CS 1211 Programming in C	3 cr
Liberal education or minor field course	<u>3 cr</u>
	15 cr

Third Year*

Physics elective ^b	4 cr
Physics 5052 Computational Methods	
OR Phys 5053 Data Analysis Methods	3 cr
Liberal education or minor field courses	<u>8 cr</u>
	15 cr

Fourth Year*

Phys 3061 Instrumentation	3 cr
Physics elective ^b	4 cr
Comp 3130 or 3150 Advanced Writing	3 cr
Liberal education or minor field courses	<u>6 cr</u>
	16 cr

Spring Semester

Math 1297 Calculus II	5 cr
Phys 2011 General Physics I	4 cr
Phys 2111 Solving Phys Probs I (recommended)	1 cr
CS 1131 Intro to Programming in FORTRAN	3 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 2172 General Chemistry	4 cr
Technical elective ^c	3 cr
Technical elective ^c	3 cr
Liberal education or minor field courses	<u>4 cr</u>
	14 cr

Phys 5061 Experimental Methods	3 cr
Phys 5090 Physics Seminar	1 cr
Technical elective ^c	3 cr
Liberal education or minor field courses	<u>8 cr</u>
	15 cr

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

^bStudents are required to complete two courses (8 cr) from the following electives: Phys 4001, 4011, 4021, 4031.

^cA minimum of 9 credits of technical electives is required. Students may choose from: Phys 5041, 5052 or 5053, 5062, 5531, 5541; Lim 5001; an approved set of Engineering courses.

*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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2003-2005 Catalog

Major Course Requirements	Credits	Prerequisites	Semester To Be Completed	Grade When Completed
Year 1				
Math 1296 Calculus I	5	Math placement test		
Math 1297 Calculus II	5	Math 1296		
Phys 1021 Exploring Current Topics in Physics	1			
Phys 2011 General Physics I	4	Math 1296		
Phys 2111 Solving Phys Prob I (recommended)	1	Math 1296; concurrent registr in 2011		
CS 1131 Intro to Programming in FORTRAN	3	3.5 years hs algebra or Math 1250		
Comp 1120 College Writing	3			
Year 2				
Phys 2012 General Physics II	4	Phys 2011; Math 1297		
Phys 2112 Solving Phys Prob II (recommended)	1	Concurrent registration in 2012		
Phys 2021 Relativity & Quantum Physics	4	Phys 2012		
Phys 2022 Classical Physics	4	Phys 2012		
Phys 2033 Classical & Quantum Physics Lab	2	Phys 2021, 2022 (concurrent registr ok)		
CS 1211 Programming in C	3	3 yrs hs math; 1 sem college progrmng		
Math 3280 Diff Equations w/ Linear Algebra	4	Math 1297		
Math 3298 Calculus III	4	Math 1297		
Year 3 *				
Chem 2172 General Chemistry**	4	Math 1296		
Phys 5052 Computational Methods OR Phys 5053 Data Analysis Methods	3 3	Phys 2021; Math 3280; 1 semester college programming Phys 2012, lab/field exp beyond 2012; 1 semester college programming		
Physics elective***	4			
Technical elective****	3			
Technical elective****	3			
Year 4 *				
Phys 3061 Instrumentation	3	Phys 2012; 1 sem programming		
Phys 5061 Experimental Methods	3	Phys 2033; Phys 3061		
Phys 5090 Seminar	1	90 credits		
Phys elective***	4			
Technical elective****	3			
Comp 3150 or 3130 Advanced Writing	3	Comp 1120; 60 credits		

*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.

**With department approval, one year of college-level chemistry may be substituted for Chem 2172.

***8 credits of physics electives are required. Choose from: Phys 4001, 4011, 4021, 4031.

****9 credits of technical electives are required. Choose from: Phys 5041, 5052 or 5053, 5062, 5531, 5541; Lim 5001; an approved set of Engineering courses.

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