

APPLIED PHYSICS MAJOR

Major Requirements

The requirements for a **major in applied physics** are 54 credits:

Code	Title	Hours
Physics Courses		
PHYS 115	Foundations of Modern Physics	4
PHYS 128	Physics for Scientists and Engineers	4
PHYS 211	Physics for Scientists and Engineers II	4
PHYS 231	Introduction to Instrumentation	2
PHYS 233	Introduction to Computational Physics	2
PHYS 234	Introduction to Materials Science	4
PHYS 324	Modern Physics	4
PHYS 327	Techniques for Experimental Physics	4
PHYS 356	Condensed Matter Physics	4
PHYS 430	Senior Seminar	2
1 additional course at 300-level or above		4
Required Supporting Courses		
MATH 121	Calculus I	4
MATH 122	Calculus II	4
MATH 223	Calculus III	4
MATH 311	Differential Equations	4
Total Hours		54

The following courses are recommended but not required:

Code	Title	Hours
CSC 125	Introduction to Computer Science	4
CHEM 127	General Chemistry I	4
CHEM 128	General Chemistry II	4

Degree and Graduation Requirements

In addition to the program-specific requirements listed above, all students must complete the graduation requirements specified for their degree. See the Degree and Graduation Requirements (<https://catalog.concordiacollege.edu/undergraduate-academic-community/degree-graduation-requirements/>) section for more information.

Suggested Four-Year Plan

The four-year plan detailed below is a suggested coursework sequence. This plan may need to be adapted based on course offerings as well as individual student circumstances, such as transfer credit and study away experiences.

Course	Title	Hours
First Year		
Fall		
PHYS 115	Foundations of Modern Physics ¹	4
MATH 121	Calculus I ²	4
Inquiry Seminar		4
IOC or IWC		4
Hours		16
Spring		
PHYS 128	Physics for Scientists and Engineers ¹	4
MATH 122	Calculus II ²	4
IOC or IWC		4

Core course 1		4
Hours		16
Second Year		
Fall		
PHYS 211	Physics for Scientists and Engineers II ¹	4
PHYS 231 & PHYS 233	Introduction to Instrumentation and Introduction to Computational Physics ¹	4
MATH 223	Calculus III ²	4
Core course 2		4
Hours		16
Spring		
PHYS 324	Modern Physics ¹	4
PHYS 234	Introduction to Materials Science ¹	4
MATH 311	Differential Equations ²	4
Core course 3		4
Hours		16
Third Year		
Fall		
Advanced Physics Course 1 ¹		4
Core course 4		4
PEAK course 1		4
Elective		4
Hours		16
Spring		
PHYS 327	Techniques for Experimental Physics ¹	4
Core course 5		4
Core course 6		4
Elective		4
Hours		16
Fourth Year		
Fall		
PHYS 430	Senior Seminar ¹	2
Core course 7		4
PEAK Course 2		4
Elective		4
Elective		2
Hours		16
Spring		
PHYS 356	Condensed Matter Physics ¹	4
Core course 8		4
Elective		4
Elective		4
Hours		16
Total Hours		128

¹ Courses offered by the Physics department

² Required supporting courses offered by the Mathematics department

Suggested Applied Physics Major path for students entering the college on an even-numbered year. Students starting on an odd-numbered year follow a similar path, with the advanced physics courses for Spring 3/ Spring 4 swapped and PHYS 234 Introduction to Materials Science is taken during Spring 4.