

APPLIED PHYSICS MAJOR WITH ENGINEERING FOCUS

Requirements

Degree Requirements

This major is available as a bachelor of arts or bachelor of science degree, as defined in the section on degree requirements (<http://catalog.linfield.edu/degrees-and-programs/undergraduate/ba-bs-bsn/>) for all majors in this catalog.

Focus Requirements

49 credits from within the department, plus an additional 31-34 credits from outside the department, for a combined total of 80-83 credits:

Code	Title	Credits
Applied Physics Major Core Courses		
PHYS 210	INTRODUCTION TO MECHANICS	5
PHYS 211	INTRODUCTION TO ELECTROMAGNETISM	5
PHYS 215	MODERN PHYSICS	4
PHYS 220	THERMAL & STATISTICAL PHYSICS	3
PHYS 385	GREAT EXPERIMENTS IN PHYSICS	1
PHYS 386	EXPLORATION IN EXPERIMENTAL PHYSICS	1
ENGR 025	LABORATORY TECHNIQUES: MACHINE SHOP	1
ENGR 252	ENGINEERING STATICS AND DYNAMICS	4
ENGR 253	STRENGTH OF MATERIALS	3
ENGR 315	CIRCUITS AND ELECTRONICS I (ALSO LISTED AS PHYS 315)	4
PHYS 489 or ENGR 489	THESIS RESEARCH ENGINEERING DESIGN PROJECT	1
PHYS 490	SENIOR THESIS	3
Engineering Focus Courses		
ENGR 303	INTRODUCTION TO MATERIALS SCIENCE (ALSO LISTED AS PHYS 303)	3
ENGR 310	ENGINEERING DESIGN & GRAPHICS	3
ENGR 316	CIRCUITS AND ELECTRONICS II (ALSO LISTED AS PHYS 316)	4
PHYS 325	COMPUTATIONAL PHYSICS	4
The following courses are required outside the department:		
ECON 210	PRINCIPLES OF ECONOMICS	4
IDST 387	INTERDISCIPLINARY CAPSTONE INTERNSHIP	2-5
MATH 170	CALCULUS I	5
MATH 175	CALCULUS II	3
MATH 200	VECTOR CALCULUS	5
MATH 210	ORDINARY DIFFERENTIAL EQUATIONS	4
MATH 250	LINEAR ALGEBRA	4
CHEM 210	GENERAL CHEMISTRY	4
Total Credits		80-83

Courses must be completed with a grade of C- or better to count toward the major.

Student Learning Outcomes

- demonstrate knowledge of the foundational principles and methods in physics,
- understand that physics is a process, not just a body of knowledge, and implement the process of scientific inquiry
- communicate scientific knowledge effectively both orally and in writing, and
- leave Linfield with an appreciation for the power and elegance of physics and the ability to achieve science-related goals.

Oregon Preliminary Teaching Licensure in Physics

Students who are also seeking an Oregon Preliminary Teaching License must also complete a Secondary Education major with Licensure. In order to complete the Secondary Education major with Licensure, students should begin taking education courses no later than their sophomore year. The student must be advised by faculty in both majors.