The Physics Major – Secondary Education Specialization

The Education Physics area of concentration is designed to accommodate students obtaining a teaching certificate through the College of Education. However, completing all the courses in the Education Physics area of concentration does not in itself satisfy all requirements for obtaining a teaching certificate. Students pursuing the Education Physics area of concentration who want to also obtain a teaching certificate in secondary education must first apply and be admitted to the Secondary Education Program in the College of Education and then complete additional courses in that program.

**Introductory Physics Sequence (14 credits)**

PHYS 171 (3): Introductory Physics: Mechanics and Relativity
PHYS 174 (1): Physics Lab Introduction
PHYS 272 (3): Introductory Physics: Fields
PHYS 275 (2): Experimental Physics I: Mechanics and Heat
PHYS 273 (3): Introductory Physics: Waves
PHYS 276 (2): Experimental Physics II: Electricity and Magnetism

**Introductory Education Courses (3 credits)**

TLPL101 (1): Inquiry Teaching of STEM in Elementary School
TLPL102 (2): Inquiry Teaching of STEM in Middle School

**Supporting Mathematics/Mathematical Methods Courses (15 credits)**

MATH 140 (4): Calculus I
MATH 141 (4): Calculus II
MATH 241 (4): Calculus III
PHYS274 (3): Mathematical Methods for Physics I

**Upper-level Physics Requirements (16-17 credits)**

PHYS371 (3): Modern Physics
PHYS373 (3): Mathematical Methods for Physics II
PHYS375* (3): Experimental Physics III: Waves, Optics and Modern Physics
PHYS410 (4): Classical Mechanics
PHYS411 (4): Electricity and Magnetism
PHYS4XX (3-4): Advanced Physics Elective

**Upper-level Education Courses Junior/Senior Required Education Courses (12 credits)**

EDHD426 (3): Cognitive and Motivational Literacy Content
EDCI488M (3): Selected Topics in Teacher Education; Knowing and Learning
EDCI488P (3): Selected Topics in Teacher Education; Project Based Instruction
EDCI488W (3): Selected Topics in Teacher Education; Perspectives in Science

**Suggested (not required) Computational Physics Course (3 credits)**

PHYS165 (3): Introduction to Programming for the Physical Sciences
(students with computer programming experience may want to consider taking the more advanced PHYS474 (3): Computational Physics.)

*PHYS375 may be replaced by an additional, non-seminar 400-level approved Physics course of 3-4 credits.*