

Department Requirements for a B.S. Degree in Physics Education Area of Concentration

The Education Physics concentration is intended primarily for students interested in teaching physics at the secondary level. Students who are considering pursuing this area of concentration are encouraged to enroll in EDCI 280—Introduction to Teaching, for a survey of education and teaching. 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.

Required Courses for a Major in Physics

Freshman/Sophomore Level Required Courses:

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

Junior/Senior Required Physics Courses:

- PHYS 374: *Intermediate Theoretical Methods* (4 cr)
- PHYS 375: *Experimental Physics III: Waves, Optics and Modern Physics* (3 cr)
- PHYS 401: *Quantum Physics I* (4 cr)
- PHYS 411: *Electricity and Magnetism* (4 cr)

Junior/Senior Required Education Courses:

- EDPL 301: Foundations of Education (3 cr)
- EDHD 413: Adolescent Development (3 cr)
- EDHD 426: Cognitive and Motivational Basis of Reading (3 cr)
- EDCI 463: Teaching Reading

Required Supporting Math Courses:

- MATH 140: *Calculus I* (4 cr)
- MATH 141: *Calculus II* (4 cr)
- MATH 241: *Calculus III* (4 cr)
- MATH 246: *Differential Equations* (3 cr)
- MATH 240: *Linear Algebra* (4 cr) or MATH461: Linear Algebra (3 cr)

EDPL 301 may be replaced by EDPL 401: Educational Technology, Policy and Social Change (3 cr). PHYS401 may be replaced by PHYS 420: Principles of Modern Physics (3 cr). PHYS 375 may be replaced by one additional non-seminar 400-level Physics course of 3-4 credits.