

DETAILED COURSE DESCRIPTION

Course Number PHYS 136

Course Title Introduction to Physics for Physical Science and Mathematics Majors II

Target audience The course is designed for freshman-level physical science or physics majors. Well prepared students may consider Physics 138 as an alternative. The course includes a two-hour weekly lab.

Prerequisites Mathematics PHYS 135 or PHYS 137

Corequisites Mathematics 142

Catalog description Calculus-based physics of electricity, magnetism, optics.

Expected previous knowledge

Concepts Physical science at the high-school level. PHY 135 or PHY 137 is needed.

Skills Integral calculus should be taken concurrently.

Course Objectives

The objectives are: To cover the basics of 1) electricity and magnetism, 2) circuits and circuit elements 3) geometrical optics 4) interference and diffraction

Sample Text

Urone/Hinrichs/Dirks/Sharma's OpenStax College Physics

Minimum Material Covered

Charges and the electric field

Gauss's law

Electric potential

Capacitors, resistors, dielectrics, and current

DC circuits

Magnetic fields

Faraday's law and induction

Inductance and AC circuits

Maxwell's equations and electromagnetic waves

Geometrical optics

Interference

Diffraction