

PHY 101/102: Major Concepts in Physics I and II

PHY 101/102

**Major Concepts in Physics I and II
(8 credit sequence)**

Class Size: 10-20

Faculty: Carl Rosenzweig, Professor, Syracuse University

*Administrative Contact: [Eric Young](#), Senior Associate Director,
Project Advance*

Course Catalog Description

PHY 101: Explores the fundamental laws which govern the universe with emphasis on the concept of energy as a unifying principle. No science prerequisites. Knowledge of elementary algebra required. Includes Laboratory.

PHY 102: Explores the fundamental laws which govern the universe. Presents overview of basic ideas and contemporary research in physics. No science prerequisites. Knowledge of elementary algebra required. Includes Laboratory.

Course Overview

Physics 101-102 is the one-year introductory, non-calculus physics sequence offered at Syracuse University. This algebra-based course includes a regularly scheduled lab and provides the necessary physics background for health professionals and others who need physics but are not required to take a calculus-based course. The grades for each of the two courses will be based on three exams and a comprehensive final examination. Performance on the labs counts as 25% of the total grade.

PHY 101

The course treats the traditional topics in Mechanics: Kinematics, Newton's Laws, Circular Motion, Gravity and Planetary Motion, Work, Energy, Momentum, Rotational Motion, Vibrations, and Kinetic Theory. Problem solving and conceptual understanding are both stressed.

PHY 102

The second semester of this sequence treats the subject of Electricity, Magnetism and Optics. The specific topics are Electric Charge, Electric Fields and Potentials, Electric Currents and Circuits, Magnetism and Electromagnetic Induction, Electromagnetic Waves, Optics and Introductory Modern Physics.

Pre- / Co-requisite

PHY 101 PREREQ: NONE

PHY 102 PREREQ: PHY 101 OR PHY 211 OR AP PHYSICS B EXAM SCORE MIN 3 OR AP PHYSICS C (MECH) EXAM SCORE MIN 3

Course Objectives

N/A

Laboratory

Respective laboratories are included within the 101 and 102 courses.

Required Materials

College Physics: A Strategic Approach, 4th Edition; R. Knight, B. Jones and S. Field (Addison-Wesley)

ISBN: 9780134609034 (Pearson/Prentice-Hall, 800-848-9500)

Instructor Recommendations

N/A