



Syllabus

PHY 118 - College Physics I

General Information

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Department Science and Technology

Course Prefix PHY

Course Number 118

Course Title College Physics I

Course Information

Catalog Description First semester of a two-semester sequence suitable for transfer students seeking a laboratory science elective, life science students, and those in the engineering technologies. This course is at the mathematical level of intermediate algebra and trigonometry. Topics include motion in one and two dimensions, force laws, energy, momentum, conservation principles, rotational motion, gravity, and fluids. PHY 101 or high school Physics is strongly recommended.

Credit Hours 4

Lecture Contact Hours 3

Lab Contact Hours 2

Other Contact Hours 1

Grading Scheme Letter

Prerequisites

MAT 145 with a C or placement into Math Level 3 or higher

Co-requisites

None

First Year Experience/Capstone Designation

This course **DOES NOT** satisfy the outcomes applicable for status as a FYE or Capstone.

SUNY General Education

This course is designated as satisfying a requirement in the following SUNY Gen Ed category

Natural Sciences (and Scientific Reasoning)

FLCC Values

Institutional Learning Outcomes Addressed by the Course

Inquiry, Perseverance, and Interconnectedness

Course Learning Outcomes

Course Learning Outcomes

1. Apply Newton's laws of motion and the conservation laws in the study of mechanical systems.
2. Gather and analyze physical data. This data will be graphed to reveal mathematical relationships between variables, allowing students to compare data to physical models
3. Apply arithmetic, algebraic, and geometric principles to the analysis of mechanical physical systems.
4. Connect physics to other sciences, the arts, and to everyday life.

Outline of Topics Covered

Units, Conversions, and Dimensional Analysis

Precision, Accuracy, and Uncertainty Analysis

Kinematics in One Dimension

Constant Acceleration

Vectors and Coordinate Systems

Kinematics in Two Dimensions

Force and Motion

Newton's Laws and Applications

Friction

Drag

Elasticity

Young's Modulus, Shear Modulus

Conservation Laws

Work and Energy

Impulse and Momentum

Torque and Rotational Motion

Static Equilibrium

Gravitation

Fluids