



Course Name: PHY-126 General Physics Laboratory I

Date Updated: 2/2022

Credit Hours/week: Lab 1 hrs./wk. – 1 cr.

BEGINNING: SPRING 2022

Catalog Description: This is the first course of a two-semester sequence in laboratory physics for students who are enrolled concurrently in General Physics I (PHY-125). Laboratory experiments demonstrate concepts covered in the accompanying lecture course, while introducing techniques of observation, data recording, data analysis and formal communication of experimental results.

Prerequisite: PHY-125

Text: Einstein, General Physics I Lab Manual, CPS

Craven, Computer Techniques for Physics & Labs, CPS

Curtell & Johnson, Physics, Wiley

Supplementary Material: Must be held in the Physics laboratories, SH 216 or 268. Makes use of equipment required to carry out the exercises listed in the course outline below.

Scientific Calculator Materials: Specialized equipment, supplies, facilities, for classes limited by enrollment or restricted by accreditation and/or equipment limitations:

Syllabus:

Topics
Similar Triangles and Trigonometric Functions
Graphs, Significant Figures and Experimental Error
Writing a Laboratory Report
Drawing Scientific conclusions from Experimental Data
Linear Regressions
A Freely Falling Body
Vector Addition and Newton's First Law
Newton's Second Law
Machines
A Gas Law: Pressure vs. Temperature
Measurement of Specific Heat
Conservation of Linear Momentum
Rotational Equilibrium
Moment of Inertia
Demonstrations: Fluid Statics
Demonstrations: Fluid Dynamics

Format for Offering this Course: Traditional

Students are expected to adhere to the policies of the County College of Morris. These can be accessed at: (insert link here)

Statement of Expected Course LEARNING OUTCOMES

- Describe the physical forces acting on a particle at rest
- Describe the physical forces that act upon a particle in linear and circular motion
- Develop a knowledge and understanding of potential and kinetic energy, the conservation of energy and momentum
- Produce a Produced an-laboratory report that organizes, analyzes, synthesizes and evaluates experimental data
- Evaluate and draw conclusions from numerical data and graphical information
- Use the scientific method to analyze and derive conclusions from collected data and information (Gen Ed)
- Explain the difference between a hypothesis, a theory and a law as they are used in science (Gen Ed)
- Learning Activities for Gen Ed: Lab experiments, video and in-class demonstrations. Assessment Methods for Gen Ed: Laboratory experiments requiring students to draw correct conclusions based on observation and processing of experimental data-documented in a Lab Report

Statement of Relation to Curriculum(s):

Required by no program of study, elective for students in the science and mathematics programs (chemistry, biology, mathematics, and mathematics/science options).