



### **Course Description**

#### **PHY1004L | Physics with Applications 1 Lab | 1.00 credit**

Laboratory for PHY 1004. Prerequisite: MAT 1033; corequisite: PHY 1004. Laboratory fee.

### **Course Competencies:**

**Competency 1:** The student will demonstrate an understanding of motion, forces, and energy in classical mechanics by:

1. Applying the principles of motion to solve problems involving velocity, acceleration, and displacement.
2. Analyzing the forces acting on objects and predicting their effects on motion.
3. Evaluating the different forms of energy and their transformations in mechanical systems.

**Competency 2:** The student will demonstrate an understanding of momentum, vibration, and waves in classical mechanics by:

1. Calculating momentum and understanding its conservation in collisions and interactions.
2. Analyzing the behavior of vibrating systems and predicting their resonance frequencies.
3. Describing the properties and behavior of waves, including reflection, refraction, and interference.

**Competency 3:** The student will demonstrate an understanding of heat and its practical applications by:

1. Explaining the concepts of temperature, thermal energy, and heat transfer.
2. Analyzing the behavior of gases and understanding the laws of thermodynamics.
3. Applying the principles of heat transfer to solve problems involving conduction, convection, and radiation.

### **Learning Outcomes:**

- Communicate effectively using listening, speaking, reading, and writing skills
- Solve problems using critical and creative thinking and scientific reasoning
- Describe how natural systems function and recognize the impact of humans on the environment
- Formulate strategies to locate, evaluate, and apply information