MONROE COUNTY COMMUNITY COLLEGE

Course Outcome Summary

General Education Satisfier Course

PHY 151 General Physics I

Course Information

Division	**Science/Mathematics**
Contact Hours	**90**
Lecture Hours	**45**
Lab Hours	**45**
Total Credits	**4**

Prerequisites

MATH 151, Recommended: MATH 157 and MATH 159 or MATH 164.

Course Description

This course is a liberal arts course in the fundamental principles of physics. Units include measurement, kinematics, dynamics, energy, momentum, rotational motion, fluids, temperature and heat, waves and sound. This course is designed to fulfill the physics requirement in pre-medicine, pre-dentistry, pre-law, pre-architecture, pre-chiropractic and similar pre-professional programs. This course should not be taken as a substitute for pre-engineering physics or other related disciplines. This course requires laboratory work.

This course is approved as a General Education competency satisfier.

General Education Goal: Goal One: Critical Thinking
Competency: Understand and apply the elements of scientific inquiry and scientific principles in a natural science college laboratory course setting
Learning Outcome: Students will use the scientific method to define a problem, utilize appropriate methods to solve the problem, and propose and evaluate a solution to the problem.

General Education Learning Objectives

A. Observe and describe natural phenomena and formulate hypotheses.
B. Plan and implement scientific experiments to test hypotheses.
C. Utilize scientific laboratory skills for data collection within a college laboratory setting.
D. Evaluate experimental data and propose solutions based on this data.
E. Evaluate the proposed implications of a solution.

Course Outcomes

In order to evidence success in this course, the students will be able to:

1. Utilize units of measurement in the SI system, prefixes, unit conversions and data analysis.
   Applies to General Education Objective
   D. Evaluate experimental data and propose solutions based on this data.

2. Identify parameters and laws in both linear and rotational motion
   Applies to General Education Objective
   A. Observe and describe natural phenomena and formulate hypotheses.
   B. Plan and implement scientific experiments to test hypotheses.
   C. Utilize scientific laboratory skills for data collection within a college laboratory setting.
   D. Evaluate experimental data and propose solutions based on this data.

E. Evaluate the proposed implications of a solution.

3. Describe Newton's laws and the law of Universal Gravitation
   Applies to General Education Objective
   A. Observe and describe natural phenomena and formulate hypotheses.
   B. Plan and implement scientific experiments to test hypotheses.
   C. Utilize scientific laboratory skills for data collection within a college laboratory setting.
   D. Evaluate experimental data and propose solutions based on this data.
   E. Evaluate the proposed implications of a solution.

4. Distinguish between work and the different types of mechanical energy
   Applies to General Education Objective
   A. Observe and describe natural phenomena and formulate hypotheses.
   B. Plan and implement scientific experiments to test hypotheses.
   C. Utilize scientific laboratory skills for data collection within a college laboratory setting.
   D. Evaluate experimental data and propose solutions based on this data.
   E. Evaluate the proposed implications of a solution.

5. Analyze momentum and impulse in collisions
   Applies to General Education Objective
   A. Observe and describe natural phenomena and formulate hypotheses.
   B. Plan and implement scientific experiments to test hypotheses.
   C. Utilize scientific laboratory skills for data collection within a college laboratory setting.
   D. Evaluate experimental data and propose solutions based on this data.
   E. Evaluate the proposed implications of a solution.

6. Describe the different states of matter and the Laws of thermodynamics.
   Applies to General Education Objective
   A. Observe and describe natural phenomena and formulate hypotheses.
   B. Plan and implement scientific experiments to test hypotheses.
   C. Utilize scientific laboratory skills for data collection within a college laboratory setting.
   D. Evaluate experimental data and propose solutions based on this data.
   E. Evaluate the proposed implications of a solution.

7. Identify parameters and properties of waves including sound.
   Applies to General Education Objective
   A. Observe and describe natural phenomena and formulate hypotheses.
   B. Plan and implement scientific experiments to test hypotheses.
   C. Utilize scientific laboratory skills for data collection within a college laboratory setting.
   D. Evaluate experimental data and propose solutions based on this data.
   E. Evaluate the proposed implications of a solution.

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