Revised 04/2018

NOVA COLLEGE-WIDE COURSE CONTENT SUMMARY
PHY 101 – INTRODUCTION TO PHYSICS I (4 CR.)

Course Description

Surveys general principles of physics. Includes topics such as force and motion, energy, heat, sound, light, electricity and magnetism, and modern physics. Part I of II.
Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.
4 credits

General Course Purpose

A college level course intended for students with non-technical majors who need a lab science. Students will gain an understanding of the physical principles involved in their everyday environment. The course will serve as an alternative physics course for those students having little or no algebra math skills.

Course Prerequisites/Corequisites

Satisfactory placement into ENG 111.

Course Objectives

Upon completing the course, the student will be able to:

- Recognize and analyze qualitatively physics principles in a variety of problems and situations they encounter in their professional, personal, and educational activities
- Apply critical thinking to their respective occupational field and day-to-day life
- Use physics formulae to related to physical phenomena
- Collect and record experimental data and obtain meaningful results
- Communicate effectively on course related issues.

Major Topics to be Included

- Mechanics: velocity, acceleration, Newton's Laws
- Linear Momentum: collisions, center of mass
- Energy: work and energy, conservation of mechanical energy, power
- Rotation: angular velocity, centripetal force and acceleration, torque, angular momentum
- Properties of matter: density, springs and elasticity
- Fluids: pressure, buoyancy, Archimedes' force, hydraulic lift, fluids In motion
- Thermodynamics: temperature, heat and heat transfer, ideal gas law
- Vibrations and waves: periodic motion, pendulum, resonance, standing wave patterns, sound