**Course Description**

Teaches principles of classical physics. Includes mechanics, wave phenomena, heat, electricity, magnetism, and optics, with extended coverage of selected topics. Includes recitation as part of the lecture. Lecture 4 hours. Laboratory 2 hours. Total 6 hours per week.

**General Course Purpose**

The purpose of the course is to provide engineers, mathematicians, physicists, and scientists with the basic concepts of physics that are required for their full development into competent professionals and informed and informing citizens. The course is normally taken by aspirants to four-year institutions and generally satisfies the basic requirements of such institutions.

**Course Prerequisites/Co-requisites**

Prerequisites are satisfactory completion of MTH 174 - Calculus with Analytic Geometry, PHY 231 - General University Physics I, and satisfactory placement score for ENG 111 or division approval.

**Course Objectives**

Upon completion of the course, the student should be able to:

- Use physics as the basic tool of quantitative science and technology
- Relate physical events in terms of mathematical description using calculus
- Use the required physical and mathematical concepts and their sources

**Major Topics to be Included**

- Wave motion
- Acoustics
- Electric field and electric potential: Gauss' Law
- Capacitors and dielectrics
- DC Circuits, Ohm's Law, Kirchhoff's Laws, Series and parallel resistance and compound circuits
- Magnetism, magnetic force, Ampere's Law, Biot-Savart Law
- AC Circuits
- Maxwell's equations and electromagnetic radiation
- Light
- Geometric optics
- Wave optics