



Ephrata High School
Course Syllabus

Conceptual Physics
4045



I. Course Description

“Richness in life is not only seeing the world with wide open eyes, but knowing what to look for. We begin by looking at some of nature’s basic rules-physics.”-Paul Hewitt

This course attempts to answer questions like these by describing the rules of the world around us. The course emphasizes the conceptual understanding: comprehension of concepts before calculation. Students are expected to have some facility with algebra, trigonometry and spreadsheet software (*Like Excel & Logger Pro*) and are encouraged to use scientific calculators, notebook computers, and the Internet where appropriate. A unique feature of the class is a series of Concept Mastery Projects, where, using simple materials and the technical design process, students create projects to demonstrate their understanding of physical concepts.

II. Materials & Equipment

Conceptual Physics by Paul G. Hewitt
Online Textbook Companion
Vernier Labs (*computer and sensor based labs*)

III. Course Goals & Objectives

By the end of the course you will be expected to explain physical phenomena, using words and by completing simple calculations, related to the concepts dealing with the Nature of Science, Mechanics, E&M and Light & Sound.

IV. Course Topics (Summary Outline)

1. Mechanics
2. Sound and Light
3. Electricity and Magnetism
4. Atomic and Nuclear Physics (*as time permits*)

V. Assignments & Grading

Approximate Weighted Averages:

40%-Test
15%-Labs
10%-Homework
20% -Reading Quizzes
15%-Projects