

# General Physics Syllabus

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**General Statement:** Science is divided into the study of living things and nonliving things, in other words, the life sciences and the physical sciences. Life sciences include zoology and botany (combined as biology). Physical sciences include astronomy, chemistry, and physics. Physics is the most fundamental of the physical sciences. It is the study of matter and energy. All of nature, living and nonliving obey its laws.

**Course Description:** Text: *Exploring Creation with Physics*, 2<sup>nd</sup> Edition, Apologia Science. In addition, each student needs to bring a copy of the Bible to each class session. Finally, each student needs a scientific calculator such as a TI-084. If there is any problem with this, I have 2 calculators which I will gladly loan for the duration of the course.

The course will cover the following topics:

## Semester 1:

- Introduction
- Motion in one dimension
- Motion in two dimensions
- Newton's laws of motion
- Application of Newton's second law
- Uniform circular motion and gravity
- Work and Energy

## Semester 2:

- Momentum
- Periodic motion
- Waves
- Geometric optics
- Coulomb's Law and the electric field
- Electric potential
- Electric circuits
- Magnetism

**Class Format:** Topics will be presented in a lecture-discussion format with questions from both the instructor and from the students. Class participation by students is expected. Laboratory time will involve pre-experiment discussions followed by performance of experiments and/or exercises. Lab work is designed to demonstrate concepts presented in class. Attendance is necessary in both lecture and lab.

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- Class Requirements:
1. Each student must memorize Colossians 1:12-19. The final grade will be withheld until this requirement has been completed.
  2. Tests will be “take home.” Any resource may be used to complete these tests. Completed tests are due at the beginning of the next class session. The scores on these tests will be the major determinate of your grade.
  3. Each class session begins at 8:00 a.m. Please make every effort to be present on time. Sessions will begin with the proverb of the day. Since the book of Proverbs has 31 chapters, there is one chapter for each day of the month. We will read and discuss one chapter for about the first 20 minutes of each class session. Your attendance is required during these readings and discussions!

Student Conduct: All the usual rules of KAT apply. Do not dress in a provocative manner, treat others with respect, only one speaker talking at a time, complete all assignments, arrive at each class session on time prepared to participate, etc.

Even though the concepts we discuss are fairly simple, extra time may be required for some to understand a concept. Every effort will be made to resolve any difficulty, however, it will be at the desecration of the instructor to move on with the class rather than spend everyone's class time for one to catch up. If there are problems keeping up with the course material help is available - contact the teacher outside of the class sessions by phone or e-mail. Do not fall behind!