

Course Description

Grades 10-12 Physics

Philosophy Statement: Science instruction equips students to know and experience God's basic eternal truths revealed through His creation. Science deepens the students' faith, understanding, and awareness of the eternal power and divine character of God. (Romans 1:20)

Course Objective: This is a general introductory physics course. Students will become familiar with the following areas of study, which include: Introduction and Mathematical Concepts, Linear and Projectile Kinematics, Forces and Work, Energy and Motion, Electric Forces, and waves. This course will assist students to develop their critical thinking skills, which includes but is not limited to general problem solving, the breakdown of complex problems into workable parts, the use of math to solve problems, and working with other students to solve complex problems. Students will be able to look at any aspect of physics that we have studied and determine how that subject is related to the Bible and supports Biblical principles of an ordered creation.

Textbooks: *Exploring Creation With Physics*
Apologia Educational Ministries
Copyright 2004

Materials:

- Laboratory supplies and equipment
- Calculator

Time Allotment: 45 minutes per day, 5 days per week

Course Content:

- Kinematics in One Dimension and Free Fall
- Kinematics in Two Dimension
- Forces and Newton's Laws of Motion
- Dynamics of Uniform Circular Motion
- Universal Gravitation
- Work and Energy
- Impulse and Momentum
- Periodic Motions
- Electric Forces and Electric Fields
- Waves, Sound, and Light
- Optics
- Connections Between Scientific Ideas and the Christian Worldview

Areas to be evaluated:

- Satisfactory and timely completion of assigned course work
- Homework assignments
- Written assignments
- Labs
- Exams

Additional activities:

- Additional readings
- Media presentations
- Guest speakers
- Lecture
- Discussion
- Physics Challenges.