

# Course Syllabus

**Course:** Advanced Physics  
**School Year:** 2011/2012

**Instructor:** Mr. Scripka

**Description:** Physics is the study of creation. This course will introduce you to concepts and problem solving skills within the areas of classical mechanics, thermodynamics, fluid dynamics, electromagnetics, optics/light, relativity, quantum mechanics, and particle physics. It will cause you to see creation differently and further reveal the Glory of God through its beauty, order, and intelligent design. The course is designated “Advanced” due to the mathematical rigour, problem solving proficiency, and scope required. Students should expect a level of difficulty and speed beyond that of a normal high school physics class.

**Text:** Physics for Christian Schools by Bob Jones University Press, 2<sup>nd</sup> Edition, 2004

**Scope:** Twenty seven chapters will be covered as follows. Supplemental material covering quantum mechanics and particle physics is included.

Quarter 1: Chapters 1 – 8  
Quarter 2: Chapters 9 - 16  
Quarter 3: Chapters 17 – 22  
Quarter 4: Chapters 23 – 27

**Lectures:** The material is presented in a lecture/discussion/problem-solving format. The textbook is not often referred to in class but is often used for supplemental readings and problem sets. As a result, students are expected to take daily notes and actively engage in each lesson. Although most of the lectures are based off instructor notes, the subject matter follows the content and organization of the text.

**Grading:** Grades will be computed as follows:

Tests	60%
Labs	20%
Homework	20%

Tests will normally cover two chapters and will occur about every three weeks. Homework/classwork will be given approximately once per week and will consist of reading assignments and problem solving sets. One formal lab per quarter will be performed which will include a lab report. Other mini labs and classroom demonstrations will be performed periodically to reinforce the subject matter.

**Expectations and Policies:** Students are expected to keep up with the reading and homework assignments. Students will be expected to make up work when absent. This includes scheduling after school instruction or makeup tests when needed. Homework turned in late will receive a zero. Labs turned in a day late will receive a 25% score penalty. Labs turned in two days late will receive a score of zero. Students may wish to request additional homework problems to help gain proficiency or achieve the required mastery of a particular concept.