

The Westminster School at Oak Mountain  
Physics Syllabus (2017-2018)

Class: Physics ADV – 4<sup>th</sup> period, GL – 5<sup>th</sup> period

Text: CK12.org - students owned. A 3-ring binder will allow the student to carry the text (only the pertinent portions) to class and they are allowed to write in the book.

Online: <http://www.ck12.org/book/CK-12-Physics-Concepts-Intermediate/>  
Westminster is developing a school specific online curriculum.

Assessments:

Tests:	55%	At least 3 (100 point) per 9 weeks
Projects:	15%	(Quarterly – listed below)
Labs:	15%	5-6 per 9 weeks
Quiz/Hmwk:	15%	various

Purpose:

The study of Physics creates a backdrop to all the interactions that take place within the God's special creation, the Universe. Although most of life operates on the surface, the study of the underpinnings of the world we live in creates understanding of why buildings have to be built a particular way, how an air conditioner works, how a 50 ton airplane flies, and why we take a trip to Busch Gardens in Tampa to ride roller coasters. We will study scientists like Newton, Bernoulli, Kepler, Einstein, and their impact on the nature of science. Learning how to think scientifically is challenging, but this course offers them an opportunity to see the world in a new and more complete way. The students will express themselves in papers, lab write-ups, projects, and presentations. Our Physics class requires a mastery of Algebra I and any other needed math skills will be taught during the year.

Units:

1<sup>st</sup> quarter

Trigonometry (applied elements to Physics)  
Measurement - Conversions, Scientific Notation, Significant Digits  
Motion - speed, velocity, acceleration  
Forces - Newton's 3 Laws

2<sup>nd</sup> quarter

Statics  
Circular Motion/Gravity  
Work and Energy  
Momentum

3<sup>rd</sup> quarter

Rotational Momentum  
Fluids  
Vibrations – Sound  
Thermodynamics

#### 4<sup>th</sup> quarter

Electricity  
Magnetism  
Electrical Circuits  
Light/Waves/Optics  
Nuclear

#### Homework and Laboratory write-ups:

All homework and lab write-ups will be in a quadrille (graph paper) composition style notebook. It will be used almost daily and turned in weekly, so they need to be brought to class every day. Projects will not be recorded in the Lab Book.

#### Projects:

- Q1: Paper on Ancient Invention – Due Monday, October 2, 2017
- Q2: Roller Coaster Information – Due Thursday, November 13, 2017  
Roller Coaster Diagram – Due Wednesday, November 29, 2017
- Q3: Statics/Bridges – Due February 19, 2018
- Q4: Movie/TV analysis – Thursday, May 10, 2108

#### Classroom Procedures:

- A) Because my class meets in the Chemistry/Physics Lab, there are a few things that are to be avoided:
- 1) No student is allowed in the Preparation Room without permission.
  - 2) No student is allowed to “cut thru” to Mr. Thompson’s room through the Prep Room.
  - 3) Anything that is out in the room from another class is to be avoided.
  - 4) There are things in the room that can be touched and played with, and those will be delineated as they appear in the room.
- B) I desire that the student do all work without help from others. This trains them to be independent and make their work their own. There will be times where they can work together as well, during those times they need to acknowledge the group. When any research is done, they will need to give credit to those that have helped them (i.e. websites, articles, books...). This avoids plagiarism, which is claiming something to be your own thoughts when they are not. I will help them learn this during the project phase of the class. Plagiarism and cheating will be referred to the Dean of Students.
- C) There will be times that the students will forget to do homework or will turn in a project late. The penalty for late projects or papers is 11% per day. Homework can be made up within 24 hours for ½ credit. All work must be completed, even if there are no points available. If they have not completed the work, they will receive an Incomplete on their report card.

- D) Students will get sick and miss class, so the school has a policy of giving two days to complete an assignment for each day missed. At that point deductions will start for turning in late assignments. A student that is tardy to class will receive a referral and the Dean of Students will handle the situation.
  
- E) There is a makeup work folder in the front of the room for any missed assignments.

If you have any questions, feel free to contact me.

Dale Carrell  
Physics Teacher