

Physics Syllabus
2015-16
Legacy Early College High School
Mr. Redmond – Instructor

Introduction

Physics is more than just a science course. It can be described as the controlling ideas that govern the entire universe. Without physics there would be no chemistry, nor biology. Physics in this regard is why everything is. This course's text is Physics by Cutnell and Johnson. This will be a helpful resource on this journey, as well as the source of much homework.

Classroom

The classroom is a learning environment. Distractions from the coursework will not be permitted. The use of electronic devices in the classroom not directly pertaining to the work at hand is also not permitted. Warnings will be given, however, in the event of multiple infractions the device may be taken away for a time. The classroom is also a safe place. Inflammatory comments should not be made, especially when they are against a fellow student.

Homework

Assignments may be given during class that are to be returned completed. All assignments are due the following Tuesday after they are assigned. Lab reports are the only exception to this rule and are conventionally due one week after the lab is completed. Late assignments lose 10% each day they are late. Assignments not turned in will be given a grade of 1. Occasionally a student is absent from class. As a student you are responsible to collect any missed assignments. Any missed assignment not turned in will be given a grade of 2. These are mere markers for the grade book. 0's are earned.

Exams

Two exams will be given each 6 weeks. 12 total. One will be a Curriculum Based Assessment (CBA) as mandated by the district.

Projects

There will be some out of class projects., typically one per semester. Details will be given closer to the time of the assignment.

Laboratory

There will be one or two labs each week. It will generally take place at the end of the week and associated with that week's lesson, though they may relate to a previous week's lessons. Each lab project will require either a formal report (2 per 6-weeks) or a set of post lab questions. In either case the Laboratory work will be due one week after the lab is completed (different than homework).

Breakdown of Scoring

Various coursework will break down into a percentage for each 6-week grading cycle. It will be as follows:

Homework/Daily work	20%
Labs/Quizzes	30%
Exams/Projects/Labs	50%

Tentative Schedule of Coursework

Date	Topic
Aug 24 - Aug 28	0. Laboratory safety and management
Sep 1- Sep 11	1a. Kinematics in One Dimension
Sep 14 - Oct 2	1b. Kinematics in Two Dimensions
Oct 5 - Oct 9	2. Dynamics/Force
Oct 12 - Oct 30	3. Gravitation, Relativity, Relative Motion
Nov 3 - Nov 13	4. Energy
Nov 17 - Dec 11	5. Momentum
Jan 4 - Jan 15	6. Simple Harmonic Motion
Jan 19 - Feb 12	7. Rotational Motion/Angular Momentum
Feb 15 - Mar 4	8. Waves and Sound
Mar 15- Mar 25	9. Electrostatics
Mar 28 - Apr 5	10 DC Circuits
Apr 5 - May 2	11. AP Test Review
May 3 - May 30	12. Thermodynamics and Magnetism

Extra Literature

Second semester there will be an additional book assigned. This is a non-fiction science book that covers each scientific discipline in moderate detail. *A Short History of Nearly Everything* by Bill Bryson is an excellent "recap" of your career as a science student over the past 6 years. You will be assigned to read several chapters each week nearing the end of the spring semester. It will take us 5 weeks to read.

Absences

In the event of an absence you MUST get makeup work and notes from your peers or me. In most cases the work will be due 1 class period later.

Technology

I expect every student to have their laptop as charged as possible and operational for every class period. There will be several activities each week that will require it. Cell phones are not permitted unless otherwise stated. Each day you are expected to place your phone in the designated wall slot and not accessed until after class. Pagers are also not acceptable and should signal a review on particular life decisions.

Low Performance

If you are maintaining an average below an 80% during progress report time I will notify your parent or guardian. Your success and mastery of this material is important to me. I hope it is also important to you. In addition: All exams below a 60% score will be sent home and must be signed by your parent or guardian.

Laboratory Exercises

Instructional Activity	Learning Objectives	Materials
Penny Lab	Scientific Method	
Velocity and Δ Velocity Lab	1D Kinematics	
Power Graphing Exercise	1D Kinematics	
Not-So Free-fall Lab	1D Kinematics	
Freefalling Washers Lab	1D Kinematics	
Vector Scavenger Hunt	2D Kinematics	
Projectile Catch Lab	2D Kinematics	
Dart Gun Projectile Lab	2D Kinematics	
Friction Lab	Dynamics	
Flying String Toy Lab	Dynamics	
My Solar System Simulator	Gravitation	
Roller-coaster Energy Lab	Conservation of Energy	
Skateboard Simulator	Conservation of Energy	
Stretching Spring Lab	Conservation of Energy	
Crumple Zone Bumper Design Lab	Conservation of Momentum	
Egg Drop Project	Conservation of Momentum	
Pendulum Investigation	Simple Harmonic Motion	
Spring-Mass Investigation	Simple Harmonic Motion	
Torque and the Human arm Lab	Rotational Momentum	
Centripetal Force Lab	Rotational Momentum	
Spring Waves Lab	Mechanical Waves	
String Waves Lab	Mechanical Waves	
Electric Charge Web Quest	Electrostatics	
Introduction to Electric Circuits Lab	DC Circuits	
Paths of Resistance Lab	DC Circuits	
What is a Capacitor Lab	DC Circuits	
RC Circuit Lab	DC Circuits	