Overview

Welcome to Honors Physics!! This is an algebra-based course that explores the workings of everyday objects and phenomena at greater depth, speed, and rigor than the standard physics curriculum.

Goals

The main objective of this course is to inspire appreciation of physics in the world around us. Over the course of the year you will:

- Use your newly gained knowledge and insight to understand how the world around us works
- Become competent at using deductive reasoning and problem solving skills to tackle a variety of problems
- Learn how to design and construct models suited for a specific task
- Master the art of writing dry scientific lab reports

These goals reflect the belief that all students can and must learn enough science to assume their role as concerned citizens equipped with necessary information and decision-making skills in modern society.

Topics Covered

1. Problem Solving Strategies
2. Newtonian Mechanics
3. Multidimensional Kinematics
4. Gravitation
5. Friction
6. Work & Energy
7. Circular Motion
8. Momentum
9. Electrostatics
10. Circuitry
11. Sound
12. Waves
13. Light & Optics

Evaluation

You will be graded on a great number of assignments, as it is my belief that practice makes perfect, and that we all learn and express ourselves differently.

Quizzes (32%), Projects & Labs (32%), Homework/In-Class Assignments (32%), Classroom Participation & Performance (CPP) (4%).

Materials

Please bring the following to class every day, we will be relying on their use heavily:

- Notes & Paper
- Writing utensils (> two colors)
- Calculator, preferably TI83+
- Online Textbook: Principles of Physics; Kinect Books (on website)

Possible Projects

[Unit: Newton's Laws]
Engineer and build a structure (possibly bridge, tower, or dam)

[Unit: Kinematics]
Build an accurate projectile launching device

[Unit: Momentum]
Plan a container that saves an egg from breaking

[Unit: Work & Energy]
Construct a mouse-trap powered vehicle

[Unit: Waves]
Create a music video and/or audio track about concepts learned in class
Supplies & Expectations

Students are required to bring their notebook, homework, calculator, and pens to class on a daily basis. Students are not allowed to go to their locker during class. The textbook will be used in conjunction with a variety of other instructional tools throughout the year. Students will be responsible for reading assigned textbook chapters. Articles, labs, and other resources will supplement the textbook. Additionally, students are REQUIRED to print and utilize outlines/notes from https://sites.google.com/a/montville.net/polgarstudentwork/and bring them to class PRIOR to the beginning of each unit.

Class Remind101 option available for major assignments and problem sets. To sign up, please see directions on website under “Work” tab.

Grading

Marking period grades will be determined primarily by quizzes, lab reports, problem sets, projects, in class assignments, and group projects. Since this is an honors class, there will be very little (if any) extra credit offered. Make certain that all assignments, reports, and evaluations are completed on time. Late work will only be accepted (with a 50% grade penalty a maximum of three times per quarter/semester) or with prior permission from the teacher. Please note that certain assignments will not be accepted late for any reason.

Attendance

When absent, you are the one responsible for picking up your class lecture notes and learning the missed material. Students are expected to return to class ready for any and all concept checks, labs, and pre-announced quizzes.

ABSENCES ARE NOT ACCEPTABLE ON DAYS WHEN GROUP PRESENTATIONS ARE GIVEN OR WHEN MAJOR ASSIGNMENTS ARE DUE.

Academic Dishonesty / Rules

Students are expected to do their own work. Any copying of work will result in no credit (a zero) for the assignment for all individuals involved. There are NO EXCEPTIONS to this policy. Please note that it will be nearly impossible for a student to pass for the marking period if he or she receives a “zero” on large quiz or major lab report as a result of cheating. Students who are caught cheating may be withdrawn from the honors program. All MTHS rules and regulations are in effect in this class. For example, cell phones, iPods, and other technological devices will be confiscated if they are out for ANY REASON in class. There is also a “ZERO-TOLERANCE” policy for insubordination.