Honors Physics 2013-2014

- ▶ Ms. Emily Perttu: <u>eperttu@siprep.org</u>
- Class Website: http://sihonorsphysics2013-2014.weebly.com/
- Office Hours (Physics Office): Mon.-Fri. before school (7:45-8:15) & after school (2:30 3:00)

Course Overview:

Physics is the scientific study of the most fundamental laws of nature. This course aims to further develop students' appreciation for and competence in the scientific method. This course also aims to develop students' conceptual and quantitative understanding of physical principles. Students perform experiments to develop proficiency in laboratory technique in applying physical principles to the analysis of experimental data. Units of study in this course vary slightly year-to-year but may include motion, Newton's Laws, collisions, energy, thermodynamics, waves, sound, light, fundamental particles of nature, radioactivity, quantum mechanics, and electricity and magnetism.

The rational and inquiry-driven worldview taught in this course is vastly more important to your intellectual and personal development than any particular course content. When possible, look to the big picture.

Co-Requisites:

Pre-Calculus. Honors Physics requires that students take Pre-Calculus or higher.

Required Materials:

- *Technology Tools*: Scientific calculator, iPad, headphones/ear buds, and a free online Weebly Account/webpage.
- *iPad Apps*: Vernier Video Physics (\$2.99), Vernier Graphical Analysis (\$2.99)

<u>Resources</u>:

- The People's Physics Book, SI Edition 2011, by Dann, Dann, Philhour, & O'Keefe
- Course Website Look here for homework, practice tests, worksheets, class announcements, and more!
- Your classmates work and study with each other inside and outside of class.
- Me! If you do not understand something, speak up. Ask questions in class and come to see me outside of class.

Appropriate Use of Technology:

Students must bring their iPads and headphones to class every day. Whenever using technology, students are expected to comply with the Acceptable Use of SI Technology, as described in the Parent/Student Handbook. Inappropriate uses of technology will result in a warning followed by a loss of privileges and/or a loss of class points.

Course Outline:

Physics is often described as the study of motion & energy. Sometimes it's described as the study of the fundamental composition and behavior of the universe. Basically, in this class we want to explain and predict what we observe in nature as it relates to the following topics:

Motion	Electricity
Forces	Magnets
Energy	Circuits
Nuclear Physics	Light
Momentum	Sound

Grades:

Your final grade each semester will be broken down as follows:

- Daily Google Forms (2 pts each)
- Lab write-ups (5-10 pts each)
- Quizzes (10-15 pts each)
- Unit Tests (75 pts each)
- Midterm and Final Exams (100 pts each)

The aim of this class is for you to master the material. In an effort to achieve this goal, a step-system for grading will be used. In this system, if a student demonstrates mastery of a unit on a higher level assessment, lower scores on a previous assessment will be nullified. Quizzes are level 1, unit tests level 2, and midterm and final exams level 3. As an example, if a student scores a 60% on a quiz for specific topic and then scores an 85% on the unit test showing mastery of the specific topic, the previous quiz grade will be raised to 85%. Assignment and lab scores will not be altered.

Class expectations:

- Be kind and respectful to each other
- Ask questions! You should have questions, please do not be afraid to ask them.
- Use appropriate language in the classroom and in all assignments-this includes your blogs.
- Be honest and hold yourself to the highest level of integrity.
- Work hard in class and finish all homework on time.
- Always think about the material in the context of the "big picture," do not lose this perspective in the details.
- Do not panic and have fun. Do not let an assessment get in the way of learning and appreciating the material.