

Physics 1: Course Outline & Policy 2011-2012

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OVERVIEW

Physics comes from the Greek word *physica*, meaning “natural things.” Learning about these natural things is what physics is all about. Physics is the most basic of all the sciences; therefore, an understanding of physics will give you a better understanding of all the sciences in general.

Physics 1 is a survey course designed to introduce the fundamentals of classical and modern physics. The purpose of this course is to provide opportunities to study the concepts, theories, and laws governing the interaction of matter, energy and forces and their applications through exploratory investigations and activities. The course will cover the following topics: 1) inquiry in physics; 2) classical mechanics; 3) waves, light and sound; 4) electricity and magnetism; 5) modern physics. Concepts are stressed, math is less intense.

The **Physics 1** textbook, **CPO Science: Physics, A First Course** will provide the framework for the course. Unit plans and other important information will be available from my web site on PHUHS web page (<http://phuhs.org/teachers/schrockj/>).

GENERAL OBJECTIVES

1. Develop an understanding of fundamental physics concepts.
2. Improve problem-solving skills.
3. Develop good laboratory techniques.
4. Improve critical thinking skills.
5. Develop communication skills using effective writing techniques, oral communication skills, and available technology.
6. Use computers and current technology to gather and analyze data.
7. Evaluate the role of physics in today's world.
8. Understand the contributions of various people to the development of physics.

GENERAL GUIDANCE

1. **Materials needed:** scientific calculator (a graphing calculator such as a TI-83 is even better but not required), small metric ruler, protractor, graph paper, 3-ring binder, pencils and dark pens.
2. **Be prepared for class.** Being prepared for class is essential. Always bring your textbooks, pencils, paper, calculator, and notebook unless specifically told otherwise.
3. **Keep up with the class.** Within each subject area the material is cumulative. Missing out at the beginning will make subsequent material seem more difficult; excessive absenteeism will all but ensure that you enjoy a lesser degree of success in the course.
4. **Keep a loose-leaf notebook.** Retain all returned laboratory reports and homework, as well as your class notes. A well-organized notebook will serve as a handy reference when reviewing for tests and the final examination, and will serve as your record of grades received.
5. **Don't try to memorize physics.** The key to success in an introductory physics course is understanding the fundamental principles which are introduced. Memorizing the solution to a particular problem is useless if you don't understand the underlying principle involved.

6. Don't become discouraged at the outset of the course. Physics introduces concepts that are not always intuitively obvious (Some are actually counter-intuitive!) and a process for exploring new ideas that may be unfamiliar. Remember that generations of students have traveled the path on which you are taking your first steps; most of them successfully. If you are having trouble at the outset, come see me any afternoon after school. The longer you wait, the more difficult it will be to get back on track.

GRADING GUIDELINES.

1. You will be graded on a point system. A specific number of points will be awarded to all assigned work. At the end of the six-week grading period, your cumulative point total is divided by the maximum possible to determine the percentage. Your grade is determined based on the Pinellas County Grading Scale. The approximate range of assigned point values for particular graded items is as follows:

| <i>item</i> | <i>point value</i> |
|---------------------|--------------------|
| Tests and quizzes | 25 -200 |
| Labs and activities | 10 - 50 |
| Homework/classwork | 5-20 |

2. Makeup Tests, Quizzes & Labs/Late homework.
 - a. The number of days a student has to complete make-up work is equal to the number of days the student was absent.
 - b. **Late homework 50% off.** All homework is due at the beginning of the class period on the due day. Homework due on a day missed from an excused absence is due the day the **student returns to school.** Other than homework, Lab reports and other activities assigned for completion outside of class will be reduced by 10% for each day that it is late.
 - c. For missed quizzes and tests, a student must make arrangements with the teacher on the day he/she returns. Tests made up after an UNEXCUSED ABSENCE will be dropped one letter grade.
 - d. Missed labs due to an excused absence must be made up on the assigned **Lab Makeup Day** (after school). It must be made up within one week or it will count as a ZERO. Work made up after an UNEXCUSED ABSENCE will be dropped one letter grade.
3. Extra Credit. The total number of bonus points which a student may earn during a quarter **may not exceed two per cent (2%)** of the maximum point total. Students may earn extra credit in the following ways:
 - a. Extra Current Event. Guidance/cover sheet available online.
 - b. *TV Program SUMMARY:* TV program summaries will require a special guidance sheet available online.
 - c. PHYSICS IN EVERYDAY LIFE: Students more “right-brain inclined” may earn extra credit by submitting a picture or photograph from a magazine (NO drawings) of something that illustrates some aspect of physics. Each photo should be an example of physics in every day life and should be accompanied by a title and a typewritten paragraph that explains the “physics” in the photo. The photo should be mounted on 8.5 x 11 paper.
 - d. NO extra credit accepted during the last week of the grading period.
 - e. A maximum of one “extra credit” per week will be accepted from any particular student.
 - f. **Excessive tardies (>3) will result in the loss of and the eligibility for extra credit.**

STUDENT RESPONSIBILITIES

Many, if not most, physics students are eager to do well in a course which is generally reputed to be challenging. In order to ensure that an appropriate classroom learning environment is maintained for the benefit of ALL, the following rules are established to govern the behavior of those who require such guidance:

1. **Be on time for class.**
2. **Be ready to learn:** (*pencil, pen, paper, calculator, ruler, protractor, completed homework, no food or drink...water OK*)
3. **Be respectful to everyone at all times.**
4. **Speak only when it is your turn.**
5. **Do not lie, cheat or steal.**
6. **NO CELL PHONES, NO IPODS**
7. **Student ID card required!**
8. **Comply with the Code of Student Conduct.**

These as well as all **PHUHS school rules will be enforced** and will normally involve a sequence of

- verbal warning,
- classroom detention,
- and administrative referral, in accordance with school policy.
- Should circumstances so dictate, lower levels of action may be omitted in order to appropriately address a particular situation. Cheating will be dealt with on a case-by-case basis.

SUMMARY

You control the value you get out of your education! Your rewards from this course will be directly related to your investment of time and energy into it. This course will be worthless unless you take action and use the ideas in it and become an active, energetic learner!

Be **HONEST**...be **POLITE** and **RESPECTFUL**...be **RESPONSIBLE!!!**



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Welcome, and good luck!