

2007-2008 ISPS Course Syllabus

AP Physics B: Mr. Smith

ABOUT AP PHYSICS B

Welcome back, and welcome to AP physics. In this course you will discover how and why things in the universe act the way that they do. We have an exciting, and very busy, year ahead of us. While I will strive to lead you through as much of the AP curriculum as possible before the exam, providing laboratory experiences at every opportunity to reinforce your understanding, it will be necessary for you to do some work on your own. There will, tentatively, be time for us to attend an amusement park in May/June - an excellent opportunity for you to experience the laws of mechanics!

AP Physics enjoys the prestige of being one of the most challenging courses that students can take in high school - I congratulate you on accepting this challenge. For some of you, the greatest challenge will be to develop or improve abstract thinking skills. In other words, we will be analyzing problems and situations that will be difficult to picture at first, but don't worry, with a methodical approach and persistence you will soon be cracking the most daunting of problems. From my experiences as a student, scientist, and a teacher, I cannot over-stress the importance of persistence. So, when you find yourself frustrated by a principle or a problem, please remember these words from Confucius: *"Our greatest glory is not in never falling, but in rising every time we fall."*

All practice problems assigned for classwork or homework **must** be done in a 3 ring binder, and in the chronological order assigned. Students should keep all class materials neatly organized in their 3 ring binder. Details of homework assignments will be written on an assignment sheet handed out periodically including work for a number of days.

Please be cautioned that an AP course makes unusually heavy demands on a student's time and energy. There is a tremendous amount of material to cover, a lot of work to do, and very little time available. Students and parents should not be surprised by course requirements that are in excess of what you would expect from an advanced or honors course. The greatest challenge is the requirement that students remain consistent throughout the year. Success in the course will depend on the student's own motivation, ability to read and analyze, effective writing and study habits, and the ability to organize tasks and time.

TEXT *Physics* by Giancoli

MATERIALS

- 3 ring binder
- graph paper
- metric ruler and protractor
- scientific calculator - the TI-82 or TI-83 or TI-84 is **highly recommended** for this course

TIPS ON HOW TO BE SUCCESSFUL

- Avoid missing class. If you miss classes then you miss the demonstrations that help you understand difficult physics concepts. When absent, keep up with the class.
- Keep up with the class work and homework assignments. They are designed to prepare you for quizzes and tests.
- Think of each quiz as a 'practice test', and use the quiz as a tool to identify your weaknesses. Once you know your weaknesses you should act quickly to fix them.
- Ask questions in class. Seek out-of-class help from your teacher or other students. Form a peer study group.

- Study before a test or quiz (TOGETHER, THEY COUNT 75%): use the objectives, review your old papers, and redo old practice problems for which you have the solutions (but don't look at solutions while you practice or you will fool yourself).

STUDENT EVALUATION

The following weights will be applied in determining a nine-weeks grade:

Tests (<u>these are timed</u> , and set up exactly like the AP Exam)	50 %
Weekly Quizzes (<u>these are timed</u> , and set up exactly like the AP Exam)	25 %
Homework, labs and classwork	25 %

Notes to Student Evaluation

- Grades are purely % based
- All tests and quizzes will be set up, graded and curved just like the AP Exam.
- Homework answers will normally be provided during class or will be posted. Work must always be shown.
- No late homework will be accepted. Late labs will be accepted one class late for 50% of the point value. All work assigned is due at the beginning of the period. "Finding" it later does not count as on time.
- Students must always complete an individual lab worksheet, but turn in the labs as a group (stapled together). One lab may be randomly selected and graded for the group, and that grade will count for each person in the group – unless a lab is incomplete/late.

Expectations

The student will:

- *be seated in their assigned seat when the bell rings*
- *treat their fellow students and their teacher with respect*
- *give every task their best effort (persist)*

The student will not:

- *copy or allow to be copied any homework, lab, quiz, or test. Such behavior diminishes the credibility of the student, and forms habits counter to their future success.*
- *inhibit any other student from learning*

Although you are doing a college level class you still get to abide by all of the rules governing ISPS!

COURSE OUTLINE (TENTATIVE)

First Semester

1. Kinematics/Newton's Laws of Motion
2. Work, Energy, Power, and Momentum
3. Simple Harmonic Motion
4. Gravitation
5. Heat, Kinetic Theory & Thermodynamics
7. Electrostatics
8. Electric Circuits

9. Magnetism

10. Electromagnetism

Second Semester

11. Light & Optics

12. Atomic & Nuclear Physics

13. AP Exam Review

AP EXAM: Monday, 12 May 2008

14. Special Projects

SPECIAL SAFETY CONCERN: No open toe shoes. Dropping something on your foot during a lab or demonstration can be very painful with this type of footwear.

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