

THE SUBJECT MATTER:

The discipline of Physics is concerned with describing the universe in which we live in the simplest and most efficient terms possible. The major topics which we will study in this course are:

1st Semester

Unit 1: Motion in 1 Dimension
Unit 2: Motion in 2 Dimensions
Unit 3: Newton's Laws of Motion
Unit 4: Energy
Unit 5: Circular Motion
Unit 6: Simple Harmonic Motion

2nd Semester

Unit 7: Static Electricity
Unit 8: Electric Circuits
Unit 9: Waves
Unit 10: Sound
Unit 11: Light

PHILOSOPHY OF THE COURSE

The study of Physics in this course is approached from a variety of perspectives: mathematical, conceptual, and practical. It is the instructors' belief that all three of these perspectives go hand in hand. Students will be evaluated for their understanding of mathematical, conceptual, and practical applications of physics.

Required Materials

Digital Textbook: Principles of Physics, by Kinetic Books
Subscription to on-line homework system (\$10 for the year)
Pen(cil), calculator, notebook, and brain (bring these to class!)

Grading

Your overall grade for each semester will be made up of approximately ($\pm 5\%$):

10% homework
25% lab work
10% quizzes
35% unit tests
20% midterm + final exams

Each assignment, quizzes, tests, etc. will be counted individually as part of your overall grade – we will not maintain a separate quiz average, test average, etc. in the way that your Chemistry teacher might have.

Homework

The majority of homework assignments in Physics will be of the "on-line" variety: you will need internet access so that you can logon to the on-line homework server and submit your answers there. Details on the use of the on-line homework system will be described on a separate handout. Occasionally, you may be asked to do other types of assignments at home.

Review Problem Sets

At the beginning of each major unit, you will be given a review problem set for that unit, which will consist of both conceptual (written) and mathematical questions. Detailed solutions to these problems will be available on the Moodle site (more on Moodle on a separate handout). Sometimes, time will be allotted during class for students to work on review problems, but not always. These problem sets will not be collected or graded, but they are meant to help students synthesize the entire unit and make sure that they are well-prepared for tests.

Laboratory Work

Students will usually work in pairs in the lab, but will occasionally work either in larger groups or on their own. Lab reports are, of course, expected to be completed by each student individually, and evidence of copying will be brought before the honor board. Late lab work will be penalized 10% per class day late. If you miss a lab, you will need to schedule a time to come in and make it up (absolutely no using other people's data without express permission from your teacher). You will receive a separate handout describing the expected format for lab reports.

Tests and Quizzes

At the end of every unit will be a full-period test. Some units will also contain one or more quizzes along the way. Quizzes and Tests will consist of three types of questions: multiple choice, long problems, and short essays. **Students will be provided with equation sheets during tests but not during quizzes.** Also, all quizzes and tests will be graded on a curve, which your instructor will explain to you in class. Students missing a quiz or test will be expected to make it up as soon as possible upon return (extended absences will be dealt with on a case by case basis).

Extra Help

Students are *highly* encouraged to make appointments or just drop by to see your instructor for extra help outside of class. If your instructor isn't available, you are welcome to talk to any other Physics teacher who happens to be free. Here are some tips on extra help:

1. Come early: as soon as you recognize that you aren't completely understanding an idea or aren't able to do a certain problem. Don't wait until the day before the test to ask for help – it might be too late.
2. Come often: Physics is a challenging subject; even A students usually need occasional one-on-one help. If you want to come and work on problems at the teacher's desk, that's fine too. Your teacher won't give you answers to homework problems, but he/she will try and help you strategize and/or find mistakes.
3. Come with specific questions: the more prepared you are for a discussion with your teacher, the more you will get out of it. It's okay to say "I'm lost" but if you can try and take inventory of precisely what you do and do not understand, you'll likely see improvement a lot more quickly.