

2011-2012 Advanced Placement Physics C

<http://www.gnsphysics.com>

Mr. Skalor

Physics deals with the behavior and structure of matter, I prefer to define it as “The Science of Everything”. In this course you will learn the scientific basis behind many things you see and do every day and it will give you a better understanding of the universe around you. Below is important information you will need to know to succeed in this course.

Textbook: Physics for Scientists and Engineers, Fourth Edition by Paul A. Tipler

- Supply Requirements:**
- Notebook and pen or pencil daily.
 - A scientific or graphing calculator (sin, cos, etc.) is required in class daily. Calculators supplied to you during class will cost points on exams and quizzes. Please make sure you have one with you ***at all times***.
 - Ruler or straight edge and protractor. As needed.
 - **No electronic devices (phones, walkman, mp3 player, etc.) other than an approved calculator are permitted to be used in class.** These items may be confiscated at any time.

Lab Requirements: As the Regents lab requirement has been fulfilled in your last year of physics, labs will be a much more informal affair, often involving more inquiry-based learning, deeper thought and open-ended questions.

Grading Policy: Tests and Quiz grades, unless otherwise specified, will be out of a possible 100 points. The quarterly grade will be calculated as follows:

Tests:	50%
Quizzes:	25%
Labs:	10%
Homework:	<u>10%</u> 95%

The remaining 5% of your grade will be based on class participation, attitude, attendance and effort.

Tests: There will be a major test at the end of each unit or two. These will be fashioned much like the AP exam. **No reference tables will be used for any part of any exam. Calculators will only be used for Part 2 of any exam.** Exams missed due to absences must be made up within one week. Cutting on the day of an exam will result in a grade of zero, *no exceptions*.

Quizzes: Quizzes may be announced or unannounced, open or closed book. Quizzes missed due to absences may be made up at the discretion of the instructor.

Labs: Labs are an important component of this course. Please be sure to follow all instructions carefully and listen for any special instructions or procedures. If you are absent for a lab on the day it is done, arrangements must be made to make up the lab.

Homework: Homework is *crucial* for problem-solving skills. Homework will be assigned, submitted and graded via the internet through WebAssign (policies regarding this will be explained in class) (<https://www.webassign.net/login.html>). Missed homework assignments **cannot** be made up.

Participation: The participation grade is reduced for tardiness, cuts, missing work, repeated distractions, plagiarism, coming to class unprepared, etc. Points are gained by going above and beyond the usual class responsibilities. Participation and discussion is encouraged, but free-for-all talking and arguing is not. You can disagree without being disagreeable. Plagiarism is strictly forbidden, ***I check and penalize all parties.*** You are **NOT to look at each other's work, too many similarities will result in penalties! NO EXCUSES!**

Late Work Policy: Timely completion of assignments is an expectation of this course. Due dates will be clearly indicated. Written assignments are expected ***at the beginning of the class period*** on the day it is due. Working on assignments during class time, unless time is specifically set aside for this, is strictly forbidden. Penalties for late work and projects will be specified with such assignments. **PLAN AHEAD!!!** Legal absences do not count toward late days.

Homework assignments are due to be submitted by the designated due date and time. The webassign system will NOT accept late work, nor will I.

gnsphysics.com: For your convenience, a web site specifically designed for the class has been designed. The URL is noted at the top of this course outline. Assignments and other class related issues will be posted. Unit plans, this course outline, handouts, etc. will be available. If you are absent, please check the site for any missed work or you may e-mail me with questions. If you lose a unit plan or handout, please check the site before asking for a replacement, you may be able to download/print another copy.

The Advanced Placement Exam: There will be three major exams throughout the year: A comprehensive exam at the end of each major topic (Mechanics and E&M) and the AP Physics C exam, which is on Monday, May 14, 2012 (afternoon). Information about the exam itself can be found on the ETS web site, which is linked from the class site.

The Physics C course ordinarily forms the first part of the college sequence that serves as the foundation in physics for students majoring in the physical sciences or engineering. The sequence is parallel to or preceded by mathematics courses that include calculus. Methods of calculus are used wherever appropriate in formulating physical principles and in applying them to physical problems. The sequence is more intensive and analytic than that in the B course. Strong emphasis is placed on solving a variety of challenging problems, some requiring calculus. The subject matter of the C course is principally mechanics, and electricity and magnetism, with approximately equal emphasis on these two areas. The C course is the first part of a sequence that is sometimes a very intensive one-year course in college but that often extends over one and one-half to two years.

IMPORTANT: Each part of the C exam (Mechanics and E&M) will be charged as a separate exam.

Topics: The general sequence of topics throughout the year is as follows:

Motion in a straight line/Vectors	Electrostatics/Gauss's Law
Motion in a Plane	Electric Potential
Dynamics	Capacitors and Dielectrics
Work, Power and Energy	Circuits
Center of Mass/Momentum & Collisions	Magnetism/Ampere/Biot-Savart
Rotational Kinematics/Dynamics	Faraday's Law of Induction
Equilibrium	Inductance-Capacitance/AC Circuits
Oscillations	Maxwell's Equations
Gravitation	