

SYLLABUS

AP Physics C: Electricity and Magnetism

Instructor: Mr. Olthoff

Text: Physics for Scientists and Engineers (10th ed.) by Serway and Jewett

Welcome to AP Physics C! I am looking forward to an exciting year and I hope you are too. We have a lot of hard work ahead of us (we are doing a college course in high school, after all) but hopefully also a lot of fun. In AP Physics we will study in depth some of the same topics that you saw last year in your first-year course. Our topics for the first semester will include a detailed look at mechanics using a powerful new tool called CALCULUS. We will study kinematics, dynamics, energy, momentum, rotation and simple harmonic motion. Second semester we will look at electricity and magnetism, including DC circuits and induction.

Materials

You will need to bring with you to class each day several items which will facilitate our study of physics:

1. a graphing calculator
2. a pencil
3. Folder/Notebook/Binder

You will NOT need to bring your book to class each day. You may leave that at home if you wish. You will have access to online Etextbook. There are several other items which you may find useful:

- a. a ruler, compass and protractor
- b. colored pencils

Organization

This is a college level class, so we are leaving it up to you to use organizational tools that best work for you. A notebook, folder, and/or binder will be useful. We will provide you with paper handouts and packets that you will need to keep track of. You will need to organize and keep track of all labs as part of your laboratory portfolio. This portfolio may be used as evidence/justification for college credit. The first semester units are listed on the back, along with an approximate timeline for the semester.

Homework

You will have two kinds of formal graded homework: Quest and Chapter Review Written Problems. This formal homework will be graded for completion and correctness. Quest is an internet-based homework system from which you will download your assignments and into which you will type your answers. You will have a couple homeworks per unit, in general. In addition, there will be one set of chapter Review Problems per unit. You are expected to provide complete solutions neatly written out for each of these problem sets. They generally consist of more challenging problems typical of what you may see on an AP exam.

You will also have informal homework: notes, practice problems, review/example videos, AP Classroom. This informal homework might be graded, but may also be used as a form of extra review. This informal homework will generally be checked for completion and is meant to strengthen your individual understanding. Answer keys and solutions may or may not be provided. Please bring questions on these informal homework assignments to class or make an appointment outside of class.

Labs

We will typically perform at least one lab per unit and you will work in groups of 2-4 students perhaps in breakout sessions. Some of the labs will be exploratory in nature and thus more guided, less open-ended. Some of the labs will require that you design a procedure yourself.

Tests and Quizzes

There will be a quiz almost every week which will range between 20-40 minutes. There will be a test at the end of each unit, approximately once every two or three weeks. The tests will generally be one period long, but some may last longer. Quizzes will cover the recent content only, but tests are cumulative and can cover any content that we have already completed.

Grades

Your semester marking period grade will be based on the following:

Assessments	75%
Homework and Labs	25%

Your semester marking period work will count for 80% of your semester grade and the final exam will count for 20% of your grade. The assignment of letter grades will be based on the following scale

A	90-100%
B	80-89%
C	70-79%
D	60-69%
F	0-59%

Approximate Second Semester Schedule

<u>Unit</u>	<u>Chapter(s)</u>	<u>Approx. # of Days</u>
1: Electric Charges, Fields, and Gauss's Law	Chapter 22-23	12
2: Electric Potential	Chapters 24	10

3: Conductors and Capacitors	Chapters 25	10
4: Electric Circuits	Chapters 26-27	12
5: Magnetic Fields and Electromagnetism	Chapters 28-30	10
6: Electromagnetic Induction	Chapters 31	10
Review for Exam		10 days