



Physics 152

Electricity, Magnetism, & Optics

Spring 2015 – Syllabus version 2.0 (13012015)

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Physics is one of the very oldest sciences and Electricity and Magnetism two of the earliest physics subjects. These two subjects were considered separate until the early 19th century when physicists discovered that moving electric charges cause magnetic phenomena and changing magnetic phenomena cause electric currents. If that sounds a bit circular, it's because the two subjects are very much intertwined. Their unification became the field of Electromagnetism (out of which grew Optics) and is the topic of this course.

Required Materials: The textbook is *Physics for Scientists and Engineers*, 8th edition, by Serway & Jewett.
You will also need a non-graphing calculator.

Schedule: We will cover approximately one chapter per week. I have given my best guess for exam dates. Please understand this schedule is subject to revision. Exam times and locations will be determined at a later date.

Electric Fields, Gauss Law, Electric Potential, Capacitance and Dielectrics
Test 1 (Feb. 9)
Current and Resistance, DC Circuits, Magnetic Fields, Sources of Magnetic Fields
Test 2 (Mar. 9)
Faraday's Law, Inductance, AC Circuits, EM Waves
Test 3 (Apr. 13)
Light and Ray Optics, Image Formation
Cumulative Final (May 1, 2pm - 5pm)

Grading Policy: Problems consist of daily (shorter) and weekly (longer) problem sets to be handed in before class.

Problems 20%
Quizzes 10%
Exams 30%
Cumulative Final 20%
Lab 20%

Grading Scale: Grades are assigned on a plus-minus scale as follows.

A	above 93.5
A-	89.5 – 93.4
B+	86.5 – 89.4
B	82.5 – 86.4
B-	79.5 – 82.4
C+	76.5 – 79.4

C	72.5 – 76.4
C-	69.5 – 72.4
D	59.5 – 69.4
F	below 59.5

Attendance Policy: Maximum of 3 absences (excused or not). No make-up exams. Emergency exceptions will be dealt with on a case-by-case basis and are unlikely to occur. If you have an important reason (e.g., meeting President Obama) to miss class (or an exam) that you know of in advance, you should mention it to me so that we can take it into account. Class time will be my primary means of delivering announcements, particularly schedule changes; in addition to attending the lecture, it is also your responsibility to be present for these announcements. Final grade reduced by 5% per absence after the maximum is met.

Academic Honesty: All students are expected to abide by the Oxford College Honor Code. I encourage you to discuss physics and study together. For exams, quizzes, and the final exam there is to be no collaboration with anyone. For problem sets your work must be your own. Discussion is allowed; *however*, you should attempt a solution by yourself before consulting other sources including classmates, the Internet, or me.

Recommendation: You have many resources at your disposal to aid in your quest of learning physics. You have an excellent textbook that gives clear explanations and even calls your attention to possible pitfalls and sources of confusion. Read it! Your instructor is excited to be teaching you physics and very eager to help you when you have questions or need encouragement. Come talk to me!

More Things to Remember: In order to make the most of our class time, there are a few things to which we all should adhere.

- All cell phones and laptops should remain put away and never be in use during class. There are numerous studies that show these electronic devices detract not only from the concentration of the owner but also that of the other students for who the device is in view.
- I include some good advice via handout from Dr. Seitaridou about how to solve physics problems. Check it out!
- Try to come to class well rested, prepared (ready with problems and reading), and with a sense of curiosity about the physical world. By achieving this you will put yourself in a position to do very well in this course. Let's do some physics!!