PHYS101: Physics II with Lab (4 Credits)
Spring 2013, MWF 2:25-3:20, 113 Fisher, plus labs (see below)

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Office Hours: MWF 10-11, other times by appointment

Corequisite: MATH211: Calculus II
Text: Same as for Physics I, Physics for Scientists and Engineers, 4th ed. by Giancoli

Course Description: Physics II is a continuation of Physics I, a calculus-based introductory physics course. This term the topics covered include thermodynamics, electricity, magnetism, optics, and special relativity.

Grading: Three exams during the term, each worth 12% of your final grade. One final exam, worth 24% of your final grade. No makeups on exams unless prior arrangement made. Lab work and lab reports are worth 20% of your final grade, and homework is worth 20% of your final grade.

Homework: Homework will be assigned weekly, and collected weekly, usually at the beginning of class on Fridays. Homework will be graded on a scale of 0-4. Each week I will choose one problem to grade carefully, and you can earn zero, one, or two points for that problem. I will also take a brief look at the rest of your homework, and you can also earn zero, one, or two points. I will not look at late homework and you will receive a zero. Hand in what you have done. If I cannot read or follow what you have done, you will get a zero. I thus recommend rewriting your homework neatly. You will also learn by doing this. Solutions will be on reserve in the library after the homework is due. You may work with others on the homework but must hand in your own work, not copied. Please write on your homework with whom you worked. I recommend that you try the problems on your own before working with others.

Exams: The 3 exams during term may not be given during class, but will be arranged at an alternate time. The tentative schedule is below. The final exam is when the registrar schedules it. For each exam and the final you may bring a one page crib sheet that you prepare. Otherwise they are closed book. Bring a calculator.

Labs: The labs are in 113 Fisher. This term there will be six labs. All sections will meet the same week, specified as a lab week. See schedule below. If you cannot make a lab, let me know beforehand so that we can work something out. If you simply do not show up your lab grade will suffer.

Attendance: As always, required.

Week	Topics	Reading
January 21	pressure, temperature, thermal expansion, ideal gas law	13.1 - 13.3, 13.7 (may be review) 17.1 – 17.9, except 17.5
January 28	kinetic theory, heat, internal energy, specific heat, heat transfer	18.1 19.1 – 19.4, 19.10
February 4 LAB 1	First Law of Thermodynamics, equipartition of energy	19.6 – 19.9
February 11	Second Law of Thermodynamics, entropy	Chapter 20, except 20.11
February 18	BREAK	
February 25 EXAM 1	electric charge, Coulomb's Law, electric field	Chapter 21, except 21.12, 21.13
March 4	Gauss' Law electric potential	22.1 – 22.3 23.1, 23.2, 23.5
March 11 LAB 2	calculation of electric potential capacitors	23.3, 23.4, 23.6 – 23.8 24.1 – 24.5
March 18 LAB 3	electric current resistors, RC circuits	25.1 – 25.7 26.1 – 26.5
March 25 EXAM 2	magnetism, cross product	11.2 27.1 – 27.5, 27.7
April 1	BREAK	
April 8 LAB 4	Ampere's Law induction and Faraday's Law	28.1–28.7 (except 28.6) 29.1–29.3, 29.5 - 29.7
April 15 LAB 5	inductance, resonance Maxwell's equations	30.1 – 30.3, 30.5 31.1 – 31.3
April 22 EXAM 3	electromagnetic waves light, reflection and refraction	31.4 – 31.6 32.1 – 32.2, 32.4 – 32.7
April 29 LAB 6	interference diffraction, polarization	34.1 – 34.3, 34.5 35.1, 35.3, 35.7, 35.10, 35.11
May 6	special relativity	Chapter 36 (except 36.2, 36.12)