

Syllabus for Physics 220, Spring 2010

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This is PHY 220 MWF 11:30-12:20 in Dana 146, Spring 2010. My office is 163 Dana and my “lab” is Dana B052. We will be using the Sixth Edition of Giancoli’s *Physics* and *Physlet Physics* as the main texts for this course. I will be in my office (M-F) when I am not teaching and usually in Dana from 9-5 every day, except the hour before class. My office phone number is 892-2320. Lab: W 2:30pm-5:30pm and Th 1:00pm-4:00pm in Dana 127.

Expect both the lectures and the lab to last the entire time.

The grading breakdown will be as follows which highlights the importance of regular work/attendance/assigned readings:

- 3 Reviews (30% total)
- 3 Quizzes, 1 before each review (5% total)
- Final Exam (20%)
- Weekly Problems Sets with selected group problem(s) / Daily Exercises (25%)
- Laboratory and Hands-on Exercises (20%)

Attendance: Attendance at class follows the College’s 25% rule. It is one of the primary responsibilities of the student to attend each and every class. Each student is responsible for the material discussed in class and the announcements made in class. Absence from class does not relieve one from this responsibility. Please mark the roll on the side board each day you are in class. Attendance at all lab sessions and reviews is required.

Reviews: Problems on the quizzes, reviews, and final exam are similar to homework and lecture example problems. There will not be any makeup exams unless you:

- give 24 hours notice (unless emergency) by calling or e-mailing.
- have written and verifiable proof of a valid reason for missing an exam.

Homework: There will be **daily** (2 points per problem) as well as **weekly** assignments (4 points per problem). Weekly problem sets will be due on Wednesday at the beginning of class. Group and individual problems are clearly marked on the syllabus. Those with an * are problems are group problems. For group problems you may collaborate with other student(s). Please indicate the name of all members of your group on each problem set. For individual problems, you will work alone. **Copying another student's work from this class or any previous class is an honor code violation. In addition, using any solution, other than those found in your textbook or discussed during office hours, is an honor code violation.** The word **Pledged** along with your signature and the date written on your homework signifies your compliance with this requirement. Homework will not be accepted late or unpledged. Unsupported answers will not receive full credit.

Daily Exercises: You will be assigned short exercises to prepare you for what will be covered in the next class, reinforce old material, or require you to study new material. You are required to access the Internet (WWW) in order to retrieve information and complete the exercises. They must be completed by 8am the morning of the next lecture. I will alert you at the beginning of class for these assignments.

Laboratory and Hands-on Exercises: You have lab scheduled for Tuesday (Dana 127). We will use 13 lab periods during the semester. The lab/hands-on grade is based on pre-lab exercises, attendance, participation, and lab write-ups to be completed in your lab notebook. The lab notebook shall consist of entries made during each lab period. It should document the particular lab and contain analysis, diagrams, plots, and notes. The greater the amount of purposeful explanation, the higher the grade. Pre-lab exercises are due at the beginning of lab. **Don't miss lab.**

Final Exam: The final exam will be a self-scheduled, closed book, comprehensive exam. Questions concerning material covered between the last review and the last day of class will be on the final exam.

Web Stuff: I plan on using the WWW to communicate as well as assign and collect the daily problems. Lecture notes, daily homework problems, weekly homework hints and solutions, exam hints and solutions, schedule changes and guidelines (such as those listed here) will all be on the web so that you can access them anytime, and even print them out if you would like. **Note:** you will submit pre-labs and Daily exercises on the web via forms. If you want a response from me, please e-mail and do not use the form for correspondence.

<i>Week/Reading/Date</i>	<i>Concept(s)</i>	<i>Problems</i>
Week # 1 Chs. 1-12, 13 I22.1,4, I23.1-4, I24.2-3 1/11, 1/13, 1/15 Lab: Electrostatics I	Administration Mechanics Electrostatics	Due 1/20 3.10*, 3.31, 3.37* 4.32, 5.49, 6.20, 8.24* P4.1, P6.3, P9.1, P12.2
Week # 2 Ch. 16 I22.1,4, I23.1-4, I24.2-3 1/20, 1/22 Lab: Electrostatics II	Electrostatics	Due 1/27 16.12, 16.14*, 16.29 16.40*, 16.64* P22.2, P22.3, P23.4, P23.5
Week # 3 Ch. 17 I25.1-5, I26.1,3,4 1/25, 1/27, 1/29 Lab: E-Field and Potential	Electric Potential	Due 2/3 17.17*, 17.18, 17.40 17.44, 17.48, 17.49 P25.1, P25.3, P25.7, P26.1
Week # 4 Ch. 18 2/1, 2/3, 2/5 Lab: Ohm's law	Current DC Circuits	Due 2/10 18.9*, 18.25*, 18.39 18.44, 18.54*
Week # 5 Ch. 19 I28.1-2 2/8, 2/10, 2/12 Lab: Batteries/Bulbs	DC Circuits	Due 2/17 19.10, 19.19, 19.21 19.42, 19.50, 19.52 P30.1, P30.4
Week # 6 Ch. 20 I27.1-5 2/19 Lab: Magnetism	Magnetostatics Review#1 (Fri; Chs. 16-18)	Due 2/24 20.7, 20.36, 20.38, 20.43, 20.73, 20.82 P27.5, P27.6, P28.1
Week # 7 Ch. 21 I29.1-3 2/22, 2/24, 2/26 Lab: Oscilloscopes and Multimeters	Magnetostatics Faraday/Induction	Due 3/10 21.9, 21.15, 21.44* 21.67* 21.76 P29.3, P29.7, P31.3
Week # 8 Ch. 22 I31.1-4,6-7, I32.1-3 3/8, 3/10, 3/12 Lab: AC Circuits	AC Circuits EM Waves	Due 3/18 22.10*, 22.17* 22.25*, 22.52 P32.1, P32.2

<i>Week/Reading/Date</i>	<i>Concept(s)</i>	<i>Problems</i>
Week # 9 Ch. 23 I31.1-4,6-7, I32.1-3 3/15, 3/17, 3/19 Lab: NO LAB	Geometric Optics	Due 3/24 23.9*, 23.17* 23.19*, 23.30, 23.57
Week # 10 Ch 24 3/22, 3/24, 3/26 Lab: Geometric Optics	Geometric Optics: Apps Wave Optics	Due 3/31 24.3*, 24.9, 24.26* 24.33, 24.45
Week # 11 Chs. 25 I33.1-2, I34.1-3, I35.1-2, I36.1-3 3/29, 3/31, 4/2 Lab: Wave Optics	Wave Optics: Apps Review#2 (Fri; Chs. 19-23)	Due 4/7 25.16*, 25.24, 25.67* P33.8, P34.4 P35.1, P35.5
Week # 12 Chs. 26, 33.4 I37.1-2, I38.1-2 4/7, 4/9 Lab: Special Relativity	Special Relativity General Relativity	Due 4/14 26.3, 26.11* 26.13, 26.26*
Week # 13 Chs. 27 Old QM Web 4/12, 4/14, 4/16 Lab: Atomic Spectra	Due 4/21	27.8*, 27.21 27.44*, 27.54* Physlets
Week # 14 Chs. 28-29 Web 4/19, 4/21, 4/23 Lab: Nuclear Radiation	Quantum Mechanics	Due 4/28 28.9, 28.11* 28.25*, 28.58
Week # 15 Ch. 29-30 4/26, 4/28, 4/30 Lab: NO LAB	Quantum Mechanics Review#3 (Wed; Chs. 24-27)	Due 5/5 30.12, 30.28, 30.43* 31.5, 31.22, 33.18, 33.19
Week # 16 Ch. 30-31 5/3, 5/5	Nuclear Physics Nuclear Physics: Apps	
Week # 16-17 5/7-5/12 (8:40am)-(5:15pm)	Final Exam	Self-Scheduled Comprehensive