

PHYSICS 221: COURSE OUTLINE – Fall 2009

Essential course information for which you are responsible

Instructor: Prof. G. R. Grist

Office: 7-7320

Office Hours: Tu Th 11 - 12

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Homepage: <http://www.smccd.net/accounts/gristg/> The course webpage is linked here.

No-Question-Too-Dumb Office Hours: If my office hours are not convenient for you, email me or make an appointment; I am usually on campus most of the day Tuesday and Thursday.

Course Schedule: Tu, 1:10 PM – 2:00 PM in 7-7305

Course Description and Prerequisites: This course is aimed at premedical, biology or architecture students who plan to transfer into the University of California system. Many of UC campuses now require a year of calculus based physics for premed, biology and architecture majors. This course would provide the necessary supplement to the algebra - trigonometry based PHYS 210/220 sequence. The prerequisites are completion of, or concurrent enrollment in, MATH 242 or MATH 252, and completion of, or concurrent enrollment in, PHYS 220.

Course Goals and Student Learning Outcomes: The goal of this course during the next sixteen weeks is to introduce you to the field of astronomy and to the sciences in general. I will provide you with the basis you need for an understanding of the scientific method and a foundation in critical thinking. I want each student to walk away from this course with a new appreciation for astronomy and for modern scientific practices.

By the end of the term, students will...

- Exhibit a conceptual understanding of the physical laws of electricity and magnetism, optics and modern physics.
- Develop sound problem solving skills utilizing calculus.
- Have improved skills in critical thinking.
- Be knowledgeable in the development of the physical sciences.

Required Materials:

- Texts
 - *College Physics 8Th ed.* by Serway
 - *QED: The Strange Theory of Light and Matter* by R. P. Feynman
 - *Used Math* by Clifford E. Swartz (Suggested)
- A scientific calculator.

Course Activities: These are designed for you to get the most out of this experience.

Reading (Studying) - Check the schedule posted on the class website to see what is coming next and to download the assignment handout. Scan the handout before lecture to prime your mind, and then after the lecture read through the handout along with your lecture notes for full effect.

Problem Sets - These will be posted online along with the handouts on the class website to practice your understanding of the material. There is approximately one set for each topic / week. If you have trouble answering a question, review that material (i.e. text, handouts, lecture notes, etc.) and try again. Still stuck? Come to office hours.

Exams - There will be two exams of equal weight given during the term. The last exam will occur during the final week of instruction, **not** the scheduled "final exam" time. All exams are closed book, and closed notes, but a scientific calculator is allowed. The exception is that Feynman's *QED* will be allowed on the final.

Time Management: To be successful in this course you will need to keep up with all of the assignments. Falling behind in a science course can be catastrophic! In other words, it may be almost impossible to catch up if you get behind.

Attendance and Participation: You are responsible for all material presented in class, including announcements about class procedures and scheduling. I will randomly take attendance. Although formal attendance will not be taken, you are urged to attend the lectures; after all, you paid for them. Besides, this is the only way for you to participate in class discussions, hear other student's questions or ask your own.

Grading: Performance will be primarily evaluated by problem sets and two exams. I will evaluate your final grade based on a 10/90, 20/80, or 30/70 weighting between problem sets and exams, using whichever split earns you the highest grade.

To do well in this course, you are expected to participate fully in the course activities. This includes problem sets, reading assignments and class attendance and participation. College level work is expected for all assignments.

Class Environment: I try to create a class environment that is enjoyable, safe, and conducive to learning. Towards this end, it is essential that all of us show respect for one another. Specifically:

1. **Be on time for class.** You must be in your seat when the class starts. If you arrive late, please quietly enter at the rear of the room. **There will be no late seating for exams.** If you are late you will miss that exam.
2. **Be prepared for class.** Any work that is due (i.e. problem sets) must be turned in before class starts. Bring any required materials (i.e. calculator, handout) with you.
3. **Always turn off your cell-phones, PDA, etc.** If you have an emergency situation that requires you to have your phone on see me prior to class.
4. **Be respectful of others.** Do not talk during lectures. Do not interrupt another student - only one person talks at one time. No sleeping in class.
5. **No make ups.** Work that is missed (i.e. exams, problem sets, etc.), or more than two days late for due date assignments, **will be counted as zero** and cannot be made up. If you have a valid and verifiable excuse (e.g., you donated a kidney to a member of my immediate family) stop by my office and we'll talk.
6. **Do your own work.** If you turn in any work that indicates copying, you will receive a grade of zero. If you receive or give help on an examination you will receive a grade of zero. All such cases will be referred to the Dean.
7. **Smoke Free Policy.** Smoking is now restricted to designated parking lot areas.

Special Arrangements: If you have a verifiable condition that will make it difficult to complete the course without special arrangements, please notify me as soon as possible.

You alone are responsible for managing your life; therefore I will not drop you. The following dates (deadlines) are administered by the college. If you need to drop the course you must do so by the last day to drop. After that date I will have no choice but to assign you a grade, and that grade cannot be a **W** or, except in rare circumstances, an **I**. Students who simply disappear into the fog risk harming their GPA.

If you have concerns about your progress, let's talk. I may be able to help you find a strategy that will be successful for you.

Important Dates

Sept 1: Last day to request a refund

Sept 11: Last day to drop without a "W"

Nov 18: Last day to drop with a "W"

Jan 8: Grades available on WebSMART

☺ **FINAL EXAM: 1:10 PM Tuesday, December 8** ☺

Work Standards: As a college level course there are certain expectations that you must meet in your work product. This is so that you can make yourself clearly understood, allow me to grade everyone on an even basis and so that you can develop professional standards that you will use for a lifetime. You can't be expected to do something that you are unaware of, so here is a starting point that is common to all of your assignments.

All work turned in must meet the following standards to be graded:

- 1. Cover sheets:** All papers turned in must include a coversheet that is clearly labeled as follows:
Upper right hand corner
 - Name - First name then last or family name (i.e. Marie Curie, A. Einstein)
 - Course (PHYS 221)*Center of page*
 - Title of work (for example, 'Problem Set #1: Waves').
- 2. Staples:** Use staples to hold together multiple page assignments. Loose sheets get separated and lost, paperclips snag on other papers in the stack, and report covers make stacks unmanageable.
- 3. Paper:** Use standard 8.5 x 11 sheets. Be sure that your edges are clean (i.e. No frayed and tattered spiral binding remnants).
- 4. Neatness Counts:** Your work must be reasonably neat, legible, and readable. I expect your work to be professional, comparable to what you would turn in to your employer. Use a word processor for written material (reports). Diagrams and sketches are usually better done in pencil. When writing in ink, use a blue or black. Red is reserved for corrections.
- 5. Use proper English:** When answering questions, use complete sentences (i.e. answers like "yes", or "90 times" are not OK). If you have difficulty with English for any reason, please see me so we can work something out.
- 6. Late assignments:** Assignments are due at the *beginning* of class, no exceptions. It is essential for you to turn in work on time in order to be successful in this course, just as in life. Unless you have made prior arrangements with me, points on late work will be deducted according to the following schedule:
 - *First Day Late* (1:10 PM Tuesday until 1:10 PM Wednesday), *20% Deduction*
 - *Second Day Late* (1:10 PM Wednesday until 1:10 PM Thursday), *Half Credit*
 - *After Second Day* (past 1:10 PM Thursday); *No Credit!*

Late assignments must be given to the MESA Center to be date and time stamped to be accepted. If you leave it anywhere else (i.e. mailbox, desk, under a door) it will be lost and given no credit.

- 7. Group Work:** I encourage working together with other students. However be sure to create your own work product. Direct copying of assignments is not permitted, and is considered plagiarism, a violation of scholastic standards. See item 6 under "Class Environment".