

Jan 2009

Dear Young Collaborator,

Welcome to #110. That is the number of the semesters since I began working with young folks such as yourself. First, they were peers, then children and now grand children and beyond. Over these 54.5 years it has been a source of great pleasure for me to get to know each one of my “buddy” physicists and endeavor to develop her/his talents to the max. Indeed, I must take tell you that once you sign up to work with me YOU become SPECIAL. I urge you to fully participate so that as before the ensuing semester will be a well earned success. The bottom line is that you want to earn the highest grade and I promise you that you will get there if both of us work together. It has to be a joint effort so we can all enjoy our time together. Take care. GOD BLESS you!

- 1) The following notes should help in this endeavor. It is important to note that Physics is SIMPLE but it is NOT EASY and so it requires deep commitment from each one of us. Your job is to ask questions in class (if you are comfortable) but definitely outside of class at the first possible opportunity. This is a privilege that no student should ever concede. Answer can be dumb, questions NEVER: to facilitate such discussion I have L-O-N-G office hours. Drop by whenever the notion strikes you.

<u>Times</u>	9:30 AM-6: 00 PM
<u>Days</u>	Mon, Tues, Wed, Thurs, and Fri
<u>Note</u>	Your visits earn a Bonus, see 6 below

- 2) My job is to help you construct succinct and consistent answers which make sense (to you). Sometimes the answer is so simple that you get the feeling— the old man is making fun of me. Not true. Fact, I have spent years addressing similar questions. You just got started. Every problem is hard until we figure out the solution. The bottom line is: There is NO SUCH THING AS A DUMB QUESTION.
- 3) The concepts are subtle, sometimes even counter intuitive, and the derivations are somewhat tricky also, the pace is quite fast. It is crucial to remember that it took people like Newton, Maxwell, Einstein, etc. many, many months and years of work before they could formulate the answers. We are lucky that their thoughts have been distilled over the centuries and are presented to us in a well digested form. However, to appreciate them and be able to use them with some facility we need to work and work hard. By the way, listening to material just once in a lecture is almost never enough. Reading it over for the first time is essentially an introduction. We need all of these following activities to ensure success:

Lecture- Introduces you to the concepts. Butress it by reading (both before and after) the book and especially the on-line notes (see 4 and 10 below). Formulate questions and come and discuss with me as soon as possible. If you do not come to lecture you will miss some of the subtleties and will not be able to formulate meaningful questions for discussion. Visits also earn you a bonus (See 6).

Discussion- (led by T.A.) of the assigned problems. Please attend and arrive prepared to raise questions. Your quiz grade depends on being able to do these problems. Work out the solutions and clarify any doubts before the date for the quiz. Again, never hesitate to drop by my office so we can solve problems together.

Laboratory- is an essential part of the course because Physics is largely an Experimental Science. In the lab you should discuss your results both with the T.A. as well as your peers. Most of the labs are designed to “check” some of the equations derived in class. Do they work as expected? Be skeptical. All progress in science is made by questioning the existing body of knowledge.

- 4) The Book: Alas it does not provide all that we need. In a peculiar way it is both too much and to little. However, it is essential. Quiz problems (worth 100 points) come directly from the book. 1/6th of your grade depends on quizzes. Helps boost your grade!
- 5) Laboratory: Very important. Do every experiment, get every report graded. Helps boost your grade!
- 6) Bonus: Every office visit gives a bonus of 2% of your earned grade. 5 (five) visits count. Maximum bonus 10%.
Example: Grade 80/100, 5 visits, Bonus 8.
VISITS ARE ENTIRELY YOUR DOING. THERE IS NO UPPER LIMIT. SO DROP BY AND LET US SHARE.
- 7) Formulae For Sale: Although “formulae” sheets are provided you can also buy a formula (for one point) during any exam.
- 8) Problem #'s on the schedule: 1-8 means problem 8 of chapter 1.

- 9) Roughly speaking, the letter grades at the end will be determined as follows:

A→ 510-600 [A+ > 580]

B→ 420-509 [B+ > 480]

C→ 320-419 [C+ > 390]

D→ 250-319 [D+ > 300]'

There is NO curve. You compete with yourself!

- 10) To supplement the book, notes will be put online (as well as in the library, if permitted). I, as well as you T.A.'s always have a copy so, in a pinch you can access them from us. Altogether, for the semester, the notes will amount to about 150 pages. Since the exams are based on our class discussion please read the notes carefully.
- 11) In all honesty I am full aware of my limitations as well as the complexity and subtlety of the concepts to be presented. Plus, they pile up ever so quickly. That is why I push frequent one-on-one discussions. Also many of you ask for letters of support-for gaining admission to professional schools. I am happy to write such letters of recommendations based on our interactions. Thus, visits are triply important.

God Bless You!
SMB