Physics 314: Modern Physics

- Also known as: PHY 314, CRN 10266, Sec 800, Credits 3.0.
- Instructor: Dr. Shashi Kanbur, Rm 124A, Snygg Hall, SUNY Oswego.
- Email: kanbur@oswego.edu, Tel: 2679.
- Office Hours: Monday 4-5pm, Thursday: 9.30-11.30am or make an appoint-
  ment by phone or email.
- Lectures: MWF, 11.30am-12.25pm.
- Book: "Modern Physics for Scientists and Engineers" by S. Thornton and 
  A. Rex, third edition.
- Layout of the Course:
  - Traditional lectures, some class demonstrations, some computer demon-
    strations.
  - Calculus based.
  - Reading Assignments, homeworks, two in class exams, a comprehen-
    sive final and a project.
  - The syllabus is basically Chapters 1-7 of the book.
  - This is not set in stone - may change as the semester progresses.
  - Final exam: 30%, In class exams: 40% Problem sets: 10% Project 
    20%.
  - Two in class exams plus a comprehensive final. Exam dates of these 
    in class exams depend on how we progress but I will give plenty of 
    notice. This is not a course on the memorization of formulae. These 
    will be given if needed.
  - Final comprehensive exam. Unless its a medical emergency, there will 
    be no makeup for this final comprehensive exam.
  - There will be makeups for the two in class exams but I strongly urge 
    you to take these on the scheduled days.
  - Problem sets - with perhaps 4-5 questions most weeks. Due the fol-
    lowing week. Grades and solutions follow the week after. Can discuss 
    the assignments with each other but final, submitted solution must be 
    your own. Problem sets are important since the in class exams and 
    final will consist of questions very similar to the exams. Its in your 
    interest to show your working in these problem sets and also the exams 
    since I wont just give marks for the final answer.
The Project is a short literature review of a topic of your choice: you need to produce a 5-10 page writeup plus there will be an in class presentation. You should see me to discuss the choice of project and should finalize the choice of project by the end of February. Possible ideas for the project:

* The Hubble diagram for bright galaxies using the SDSS sky survey.
* A history of the birth of quantum mechanics.
* Nanoscale physics.
* A short introduction to cosmology.
* Non-linear optics.
* Industrial applications of quantum mechanics.
* Some other "research" type projects using the Sloan Digital SKy Survey Catalogue

I will take attendance in class though it doesn not count to your final grade.

Will give lecture notes which contain all the required material - also in the book.

Lectures will consist of going over these notes, going over more worked problems and real-life examples.

How do I succeed in this class?

* Come to class; bring the book and lecture notes, plus a pencil, notepad and a calculator.
* Do reading assignments; Do assigned homeworks; go over worked problems; go over homework and homework solutions. Think about the material - try to understand the concepts.
* Stay current.
* Ask questions: in class, by appointment, office hours. If I don't know the answer, will try to get an answer by the next class.