

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 appointment 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 demonstrations.
 - Calculus based.
 - Reading Assignments, homeworks, two in class exams, a comprehensive 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 following 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't 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.