Physics 7320

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The grader is Yu-Ping Lin (Yuping.Lin@colorado.edu)
Class meets MWF 1:00 to 1:50 in Duane G125
Office hours Monday –2-4 or 5 (depending on whether there’s a particle seminar at 4) and and Tuesday–1 to 5, plus when you can find me
Grade:

• homework 250
• midterm 100
• final 150
• total 500 points

The midterm will be in the evening, 1 1/2 hours long, in mid March. The final is Monday 4 May, 4:30-7 in our classroom.
Homework will typically be given out on Mondays, due Wednesdays 10 days later. The questions will also be posted on

• http://www-hep.colorado.edu/~degrand/p7320.html

NO late homework accepted. Homework solutions will be scanned onto the web page.
Text: Jackson, “Classical electrodynamics.”
Books I like and will try to put on reserve in the Math-Physics library include

• Landau and Lifshitz, “Classical theory of fields”
• Landau and Lifshitz, “Electrodynamics of continuous media”
• Ryder, “Quantum Field Theory” – very useful when we start doing classical relativistic field theory. It seems rather dull when you first open it, but the discussion of its topics are usually quite clear.
• Low, “Classical Field Theory”
• Born and Wolfe, “Optics” – a remarkable book. It dates from the late 50’s, but has been frequently updated. Its discussion of diffraction is fairly complete and is a good contrast to Jackson’s. It’s not an easy read.
Thorne and Blandford, “Modern Classical Physics.” A sprawling and somewhat unfocussed treatment of the parts of classical physics which they (a general relativist and an astrophysicist) are interested in. The parts of the book that will make good backup reading for 7320 are chapter 2 (special relativity) and chapters 8-9 (diffraction and related topics). You could spend years working through all 1500 pages!

Also, I put links on the web page to four items

- “How light interacts with matter,” by V. F. Weisskopf. This is nontechnical but very deep. It’s worth reading twice: once at the start of the term and then after we have finished the radiation section of the course.

- My sophomore-level special relativity notes. We will do special relativity at a much higher level than these notes, but they might be a good refresher. The genesis was that a few years ago I taught our sophomore modern physics course and realized that I did not understand anything which was written in the elementary texts I read (even though I use relativity in my research). So I wrote up what I thought was important.

- I also put a link to Einstein’s original 1905 article.

- There is a link to my graduate quantum mechanics notes. If I end up talking about the quantum electromagnetic field, this is as close as I can get to what I will say. See Ch. 14. Ch. 12, semiclassical radiation theory, might also be useful.

Finally, if you qualify for accommodations because of a disability, see me as soon as possible but before the second week of class.

A long version of the syllabus with all kinds of required statements can be found in a link on the class web page. Here it is!

Syllabus Statements:

Accommodation for Disabilities

If you qualify for accommodations because of a disability, please submit your accommodation letter from Disability Services to your faculty member in a timely manner so that your needs can be addressed. Disability Services determines accommodations based on documented disabilities in the academic environment. Information on requesting accommodations is located on the Disability Services website. Contact Disability Services at 303-492-8671 or dsinfo@colorado.edu for further assistance. If you have a temporary medical condition or injury, see Temporary Medical Conditions under the Students tab on the Disability Services website.

Classroom Behavior

Students and faculty each have responsibility for maintaining an appropriate learning environment. Those who fail to adhere to such behavioral standards may be subject to discipline. Professional courtesy and sensitivity are especially
important with respect to individuals and topics dealing with race, color, national origin, sex, pregnancy, age, disability, creed, religion, sexual orientation, gender identity, gender expression, veteran status, political affiliation or political philosophy. For more information, see the policies on classroom behavior and the Student Code of Conduct. Preferred Student Names and Pronouns CU Boulder recognizes that students’ legal information doesn’t always align with how they identify. Students may update their preferred names and pronouns via the student portal; those preferred names and pronouns are listed on instructors’ class rosters. In the absence of such updates, the name that appears on the class roster is the student’s legal name.

Honor Code

All students enrolled in a University of Colorado Boulder course are responsible for knowing and adhering to the Honor Code. Violations of the policy may include: plagiarism, cheating, fabrication, lying, bribery, threat, unauthorized access to academic materials, clicker fraud, submitting the same or similar work in more than one course without permission from all course instructors involved, and aiding academic dishonesty. All incidents of academic misconduct will be reported to the Honor Code (honor@colorado.edu; 303-492-5550). Students found responsible for violating the academic integrity policy will be subject to nonacademic sanctions from the Honor Code as well as academic sanctions from the faculty member. Additional information regarding the Honor Code academic integrity policy can be found at the Honor Code Office website.

Sexual Misconduct, Discrimination, Harassment and/or Related Retaliation

The University of Colorado Boulder (CU Boulder) is committed to fostering a positive and welcoming learning, working, and living environment. CU Boulder will not tolerate acts of sexual misconduct, intimate partner abuse (including dating or domestic violence), stalking, or protected-class discrimination or harassment by members of our community. Individuals who believe they have been subject to misconduct or retaliatory actions for reporting a concern should contact the Office of Institutional Equity and Compliance (OIEC) at 303-492-2127 or cureport@colorado.edu. Information about the OIEC, university policies, anonymous reporting, and the campus resources can be found on the OIEC website. Please know that faculty and instructors have a responsibility to inform OIEC when made aware of incidents of sexual misconduct, discrimination, harassment and/or related retaliation, to ensure that individuals impacted receive information about options for reporting and support resources.

Religious Holidays

Campus policy regarding religious observances requires that faculty make every effort to deal reasonably and fairly with all students who, because of religious obligations, have conflicts with scheduled exams, assignments or required attendance. For each class, check with your faculty member in advance so that you are aware of their specific requirements for accommodating religious observances. See the campus policy regarding religious observances for full details.