

Symmetries and Idealizations Syllabus

Physics 320

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Course page <http://physics.oregonstate.edu/ph320>

Text (GEM) Griffiths, *Introduction to Electrodynamics*, 3rd ed., Prentice-Hall, 1999. ISBN 0-13-805326-X.

(RHB) Riley, Hobson & Bence, *Mathematical Methods for Physics & Engineering*, 2nd ed., Cambridge, 2003. ISBN 0-521-89067-5.

Texts

A complete list of required and optional texts for the the entire year of Paradigms courses can be found on the Paradigms website. For this course, you will need Griffiths (GEM), Taylor (T), and Riley, Hobson, & Bence (RHB). We will also be using two sets of course notes: Math (NM) and Physics (NP), which should be available as links here immediately before classes start.

Course evaluation

- 50% required homework .
- 50% final exam.
- Practice problems provide simple examples for you to check whether or not you understand the material as you go along. They will not be graded. Sometimes solutions will be posted. At a minimum, you should read each practice problem and make sure that you know how to do it. If you can't, ask for help!
- Required problems will be graded. Solutions will be posted online. Assignments turned in after solutions are posted can earn at most 50% of the total points. Very late assignments will earn less. It is a good idea to turn in what you have done by the due date, and, if necessary, the rest later. Please consult me for special circumstances.

- In 400/500 level classes, some of the required problems and probably one problem on the final exam will be marked as “Challenge” problems. 500-level students are required to do these Challenge problems. 400-level students are not necessarily expected to do them. However, those students who hope to get an A are encouraged to do so. While it may be possible for a 400-level student to get an A without doing any Challenge problems, it may be difficult. (In PH 320, they are optional and don’t count for anything—fun for total eggheads.) Grading of the Challenge problems will be quite strict; I won’t even look at them unless they seem to be clearly written, coherent, complete, and essentially correct.

Ground rules

Science is inherently a social and collaborative effort, each scientist building on the work of others. Nevertheless, each student must ultimately be responsible for his or her own education. Therefore, you will be expected to abide by a number of Ground Rules:

- a) We strongly encourage students to work with each other, more advanced students, the TA, and the professor, when they get stuck on assignments (including computer work). However, each student is expected to turn in assignments that have been independently written up. In other words, the final synthesis must be entirely your own. This applies also to, and especially to, computer-generated worksheets. If you work with someone on a computer project, do not get locked in to writing the solution together. You will end up turning in the same assignment.
- b) Homework solutions from previous years are very strictly off limits. You are on your honor not to use them, and not to share your homework solutions with other students. Allow faculty to use their time interacting with you, rather than continually thinking up new assignments. Besides, if you don’t do the work yourself, it will show up very clearly on exams later. Likewise, the solutions are for your use only. You may make one copy and keep it in your personal files.
- c) Sources must be appropriately documented. If you find a homework problem worked out somewhere (other than homework solutions from previous years), you may certainly use that resource, just make sure you reference it properly. If someone else helps you solve a problem, reference that too. In a research paper, the appropriate reference would be:

Jane Doe, (private communication).
- d) Plagiarism—representing someone else’s work as your own—is unethical, but collaboration and exchange of ideas is healthy. You can avoid collaborative efforts taking on the look of plagiarism by acknowledging sources and by writing up your work independently.

- e) If you find that you have worked on a problem for 1/2 hour without making any forward progress, it would be a good idea to stop and seek help.

If you read this, send an email to me containing the word epistemology. (And don't give away the secret!) This is worth 2 points on homework 0.

Students with special needs

Students with documented disabilities who may need accomodation, who have any medical information which the instructor should know of, or who need special arrangements in the event of evacuation, should make an appointment to discuss their needs with the instructor as early as possible, no later than the first few days of the course.

Further information

Additional information can be found on the Paradigms homepage, including information about the special add/drop and withdrawal policy, a calendar for Paradigms classes, access to computers, getting keys, and much more.