

## Physics 352K, Classical Electrodynamics, Fall 2005

Section: Unique #60685, Meets T-Th 12:30-2:00, RLM 7.104

Pre-requisites: [PHY 315 and Physics 155L Wavemotion and optics lecture course and lab] and [M 427L Advanced calculus for applications II or 364K Vector and tensor analysis I]. I will assume that students in this course have a solid understanding of vector calculus, derived from these pre-requisites.

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Office Hour: Thursday 2-3 PM, or by appointment

TA: tba TA Office hour: tba

Text: *Classical electromagnetism: an intermediate level course*, by Richard Fitzpatrick. Available on the web at <http://farside.ph.utexas.edu/teaching/em/em.html>

Course content: Chapters 1 through 9 of the above lecture notes.

Course Web Site: <http://www.ph.utexas.edu/classes/heinzen/phy352k/> Lecture notes, handouts, and assignments will be posted here.

Blackboard and e-gradebook: Solutions to homework and exam problems will be posted on Blackboard.

Also, if questions arise about particular homework problems, I will post my comments on these questions on Blackboard. Grades will be posted on e-gradebook.

Homework: Assigned approximately once per week. You may work together on the homework. However, each student must hand in his or her own solution, and is expected to contribute to the solution of any problem he or she hands in. No late homework will be accepted without advance permission for a legitimate reason (illness, etc.). In computing the final grade, the lowest homework score will be dropped.

Review/Help Sessions: Review/help sessions will be scheduled as needed during the semester.

Tests: There will be three tests. The lowest of the three test scores will be dropped in the calculation of the final grade. Tests may only be missed with advance permission of the instructor. If you must miss one test, there will be no make up test - that will be the score that is dropped. If you must miss more than one test for legitimate reasons (illness, etc.) and *with* advance permission, special arrangements will be made depending on the individual circumstances.

Final: There will be a comprehensive final exam at the end of the class.

Grade: Homework 25%, highest two test scores 20% each, and final exam 35%.

### Schedule for in-class tests

Test 1: Thurs., Sept. 29

Test 2: Thurs., Oct. 27

Test 3: Thurs., Dec. 1

### Recommended supplementary texts

The following are good textbooks that cover the same material as this course:

David J. Griffiths, *Introduction to Electrodynamics*, 3rd ed. (Prentice Hall, 1999).

Pollack and Stump, *Electromagnetism* (Addison Wesley, 2002).

Feynman's lecture notes are a classic, and still one of the best sources to learn about physics:

R. P. Feynman, *Feynman Lecture on Physics*, Vol. 2 (Addison Wesley, 1964).

A book that some people find useful for learning to deal with vector calculus is:

H. M. Shey, *Div, Grad, Curl, and All That: An Informal Text on Vector Calculus*, 4th ed. (Norton, 2005).

The standard graduate textbook, very comprehensive, and above the level of this course, is

J. D. Jackson, *Classical Electrodynamics*, 3rd ed. (Wiley, 1998).

None of the above textbooks is required, but I would advise that most students buy the book by Griffiths to use as a supplement to Fitzpatrick's notes.