

PHYS 3414- Electricity and Magnetism - Spring 2008 Syllabus

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Class Meeting: MoWeThFr in PHYS 133 – 12:30-1:30pm

Office Hours

- SCEN 110 – MW 9:30-10:30am, F 1030-11:30am (these you will share with rabid UPII students).
- PHYS 134 – M 3:40-4:40pm.

Course Website: <http://www.uark.edu/depts/physinfo/em08> - All homework assignments, solutions, and lecture notes will be posted at the course website. Grades will also be posted with permission.

Course Materials:

Required Textbook – Robert H. Good, *Classical Electromagnetism*

Strongly Suggested Optional Textbook – David Griffiths, *Introduction to Electrodynamics*

Other Materials – You will be allowed to bring a math handbook to the exams (not a math textbook). I suggest *Schaum's Outline Series Mathematical Handbook*. You may also want a more advanced math handbook for the homework. There are a few in the physics library.

Schedule of Topics

Week 1 beginning 1/14: Chapter 1 - Cal III and UPII Review

Week 2 beginning 1/21: Chapter 2 - Gauss' Law

Week 3 beginning 1/28: Chapter 3 - Ampere's Law

Week 4 beginning 2/4: Chapter 4 - Faraday's Law

Week 5 beginning 2/11: Chapter 5 – Maxwell's Equation – Last Topic for Test 1. Chapter 6 – Energy and Potential

Week 6 beginning 2/18: Energy Continued, Review for Test, Test 1 ThFr.

Week 7 beginning 2/25: Chapter 7 and 8 – Multipoles and Conductors

Week 8 beginning 3/3: Chapter 9 - Dielectrics

Week 9 beginning 3/10: Chapter 10 – Magnetic Materials

Week 10 beginning 3/24: Chapter 11 – Maxwell in Matter – Last Topic for Test 2 – Test 2 ThFr

Week 11 beginning 3/31: Chapter 12 – Boundary Value Problems

Week 12 beginning 4/7: Boundary Value Problems Continued and Chapter 13 Circuits

Week 13 beginning 4/14: Chapter 14 Radiation

Week 14 beginning 4/21: Chapter 15 Radiating Systems

Week 15 beginning 4/28: Chapter 16 Radiation in Matter - Test 3 WeTh

Final Exam: Monday May 5th at 10:00am in PHYS 133

Inclement Weather Policy: Unless classes have been officially canceled by the UA, students are expected to attend all class meetings and examinations. If the student lives someplace from which they feel it would be dangerous to travel to the University, they should call and inform their instructor or leave a message for their instructor with the physics department. Students missing a test for this reason will be required to take an alternate test that I will attempt to make of the same difficulty as the missed exam. You are responsible for making the decision to travel in bad weather. I never want a student to put themselves at risk to attend class.

Grading Policy The class is graded on a straight percentage scale >85% A, >70% B, >60% C, >50% D, otherwise F. Grades will be posted online with permission.

Assignments There will be 11 homework assignments (drop 1) each worth 10 points, three hourly exams (drop ½) each worth 100 points, and a final exam worth 100 points. Homework assignments will be due Wednesdays at the beginning of class. Hourly exams will be given in class over the course of two class periods. Exams are closed book, but you may bring a math handbook.

Academic Dishonesty Instances of Academic Dishonesty will be handled in accordance with the guidelines outlined in the University of Arkansas Undergraduate Studies Catalogue. I take cheating very seriously. If you are caught cheating, I will ask that you immediately drop the class.

Final Grades At the end of the course, final grade decisions are mine. I reserve the right to give students near a grade border or with special circumstances a higher grade than they have mathematically earned. In extraordinary circumstances, I reserve the right to give a student a lower grade than they mathematically earned. (This has only happened once, don't be the second.)