PHYS 3414- Electricity and Magnetism - Spring 2013 Syllabus

Dr. John Stewart
Office: Physics 242B
e-mail: johns@uark.edu
Physics Office Phone 575-2506

Class Meeting: MoWeThFr in PHYS 133 – 12:30-1:20pm

Office Hours
- **Dr Stewart**
  - **SCEN 110 – MW 9:30-10:20am, F 1030-11:30am (these you will share with rabid UPII students).**
  - **Another Office Hour all your own chosen the first day of class**
- **Grader – Jing Wang – PHYS 201 – Office Hours: Tu 1:30pm-3:00pm & Th 3:30pm-5:00pm**

Course Website: http://www.uark.edu/depts/physinfo/em13 - All homework assignments, solutions, and lecture notes will be posted at the course website. Grades will also be posted in BlackBoard available at http:/learn.uark.edu. Videos of lecture will be posted the weekend of the week after the lecture is given. Homework and test solutions will be posted as the assignments are returned. Only a sample subset of the problems in each homework set will be graded, so work all the problems.

Course Materials:
- **Required Textbook** – David Griffiths, *Introduction to Electrodynamics, Fourth Edition*
- Other Materials – You will be allowed to bring a math handbook to the exams (not a math textbook). I suggest *Schaum's Outline of Mathematical Handbook of Formulas and Tables, 4th Edition*.
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Schedule of Topics
Week 1 beginning 1/14: Chapter 1 - Cal III
Week 2 beginning 1/21: Chapter 2 - Electrostatics – Part I
Week 3 beginning 1/28: Chapter 3 - Electrostatics – Part II
Week 4 beginning 2/4:   Chapter 3 - Boundary Value Problems – Part I
Week 5 beginning 2/11: Chapter 3 – Boundary Value Problems II (This is the final topic covered by Test 1).
Week 6 beginning 2/18: Chapter 4 - Electric Fields in Materials
Week 7 beginning 2/25: Chapter 5 – Magnetic Fields – Part I
Week 8 beginning 3/4:   Chapter 5 – Magnetic Fields –Part II
Week 9 beginning 3/11: Chapter 6 – Magnetic Fields in Materials – Part I
Week 10 beginning 3/25: Chapter 6 – Magnetic Fields in Materials – Part II (This is the final topic covered by Test 2.)
Week 11 beginning 4/1: Chapter 7 – Faraday's Laws
Week 12 beginning 4/8: Chapter 7 – Ampere's Law for Electrodynamics
Week 13 beginning 4/15: Chapter 8 – Conservation Laws
Week 14 beginning 4/22: Chapter 9 – Electromagnetic Waves Part I
Week 15 beginning 4/29: Chapter 9 – Electromagnetic Waves Part II (This is the final topic covered by Test 3.)
Final Exam: Friday May 10th at 10:15am in PHYS 133

Test Format – All exams will be closed book. Exams will be given in class in two halves over the course of two lecture periods. Each half will ask present you with three problems of which you will work two. You are allowed to drop one half of one exam. You will be permitted one 8 ½ by 11 inch sheet of paper (both sides) for formulas or whatever you want. You may also bring a math handbook and a copy of the material inside the front and back covers of Griffiths. You will be allowed access to a symbolic math program (Maple is suggested) either through your own laptop, your calculator, or the computer in the test room. The math program may only be used to do one-dimensional integrals as part of the work you turn in. You may use it to check any other mathematics you wish.

Illness Policy - Please do not come to lecture or any other class if you have a fever or flu-like symptoms. Contact me immediately by email. Stay at home until you are better. See a doctor when you can. I will make appropriate accommodations with a doctor's note.

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 9 homework assignments (drop 1) each worth 10 points and three in-semester exams and one final exam (drop ½) each worth 100 points. Your letter grade in the class may not be more than one letter grade higher than your average test grade with drops or your average homework grade with drops.

Assignment	Number	Points	Drop	Points with Drop
Homework	9	10	1	80
Test	4 (3 in-semester and final exam)	100	1/2	350
Total		490		430

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.