PHYS 3414- Electricity and Magnetism - Spring 2010 Syllabus

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<u>**Class Meeting:**</u> **MoTuThFr in PHYS 133 – 12:30-1:30pm**

<u>**Office Hours**</u>
- **SCEN 110 – MW 9:30-10:30am, F 1030-11:30am (these you will share with rabid UPII students).**
- **PHYS 220– M 3:40-4:40pm.**
- **I will also take part of Tuesday's lecture to answer homework questions**

<u>**Course Website:**</u> **http://www.uark.edu/depts/physinfo/em10 -** All homework assignments, solutions, and lecture notes will be posted at the course website. Grades will also be posted with permission.

<u>**Course Materials:**</u>
> **Required 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*.

Schedule of Topics
Week 1 beginning 1/11: Chapter 1 - Cal III
Week 2 beginning 1/18: Chapter 2 - Electrostatics – Part I
Week 3 beginning 1/25: Chapter 3 - Electrostatics – Part II
Week 4 beginning 2/1:   Chapter 3 - Boundary Value Problems – Part I
Week 5 beginning 2/8: Chapter 3 – Boundary Value Problems II (This is the final topic covered by Test 1).
Week 6 beginning 2/15: Chapter 4 - Electric Fields in Materials
Week 7 beginning 2/22: Chapter 5 – Magnetic Fields – Part I
Week 8 beginning 3/1:   Chapter 5 – Magnetic Fields –Part II
Week 9 beginning 3/8: Chapter 6 – Magnet Fields in Materials – Part I
Week 10 beginning 3/15: Chapter 6 – Magnetic Fields in Materials – Part II (This is the final topic covered by Test 2.)
Week 11 beginning 3/29: Chapter 7 – Faraday's Laws
Week 12 beginning 4/5: Chapter 7 – Ampere's Law for Electrodynamics
Week 13 beginning 4/12: Chapter 8 – Conservation Laws (This is the final topic covered by Test 3.)
Week 14 beginning 4/19: Chapter 9 – Electromagnetic Waves Part I
Week 15 beginning 4/26: Chapter 9 – Electromagnetic Waves Part II
Final Exam: Tuesday May 4th at 3:00pm in PHYS 133

<u>**Test Format**</u> – All exams will be closed book. Exams will contain five problems of which you will work four. You are allowed to drop half of one exam. You will be permitted one 8 ½ by 11 inch sheet of paper (both sides) for formula 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 or the computer in the test room.

<u>**Illness Policy**</u> - 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.

<u>**Inclement Weather Policy:**</u> 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.

<u>**Grading Policy**</u> 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.

<u>**Assignments**</u> There will be 9 homework assignments (drop 1) each worth 10 points, three hourly exams (drop ½) each worth 100 points, and a final exam worth 100 points.

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.)