PHYSICS 7610

ELECTROMAGNETIC THEORY II

FALL 2009

Microscopic and macroscopic Maxwell's equations, special relativity, Lagrangian and Hamiltonian formulation of EM theory, energy-momentum tensor, conservation laws, radiation, scattering, applications. Continuation of PHY 7600. Prerequisites: PHY7600. This is a 3 credit course.

Instructor:  Prof. Robert Harr
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Office Hours:  10:30 - 11:30 Monday and Wednesday, or by appointment.


The course will follow the text, and appropriate sections for reading will be given at the start of lecture.

Lectures:  TTh 11:45am -- 1:00pm, Physics Research Building, room 177.

Lecture attendance is strongly encouraged as it is a good indicator of performance. We will spend a little time each week reviewing homework problems, but mostly we will be discussing the course material. You are encouraged to ask questions; if something isn't clear to you, it likely isn't clear to others in the class as well.

Homework:  The practice of Physics requires problem solving skills. In this course you will learn and practice problem solving skills with weekly homework assignments. You may discuss and collaborate with classmates on the problems, but the final solution must be your own. Copying of solutions will result in failure for all parties involved. Your solutions will be collected, graded, and contribute to your final grade. Homework must include explanatory text and be neatly written or it will be given zero credit. The best 9 of 11 homework scores will be used in calculating your grade.

Exams:  There will be a mid-term and a final exam. The format of the exams is to be determined.

Grading:  Homework  81%  weekly
Mid-term  6%  tbd
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<td>A+</td>
<td>95 -- 100%</td>
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<td>A</td>
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### Policies:

Late work is not accepted. The lowest homework scores will be dropped. You are allowed and encouraged to discuss problems together, but what you turn in must be your own work -- do not copy problem solutions and turn them in as your own work. As a general rule, your classmates should not see the solutions you will turn in, and you should not see their solutions. Follow [this link](http://hep.physics.wayne.edu/~harr/courses/7610/f09/syllabus.html) to view the English department's statement on plagiarism and a copy of Wayne State's academic integrity policy.

It is widely known that solutions to many of the problems in Jackson are available from various sources. If you need help with a problem there are other sources you can consult: your instructor, other books on electrodynamics, and your classmates. Copying solutions will result in failure for the class. This is a zero tolerance policy.

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### Course Content

We will cover chapters 7 to 15 in the text.

*Robert Harr*

*August 29, 2010*