PHYS 212 MWF 9:30-10:20    S2011 Study Guide for Final

Final exam will consist of multiple choice questions, regular questions, derivations, and problems. It will cover the materials from Tests 2, 3, & 4 and Chapters 31, 32, and 33.

Chapters 31, 32, and 33: Practice WileyPlus homework.
 AC circuits, Maxwell’s equations, and Electromagnetic waves.

Study old Tests 2,3,and 4:
Understanding and using Coulomb’s law ( ) in problem solving.
Understanding and using Gauss’ Law ($∮\_{}^{}\vec{E}∙\vec{dA}=q\_{enc}$) in problem solving.

**Capacitors: ** ****

1. Current (i), current density (J), resistance (R), and power (P):

   
Ohm’s law: v = iR Power:   



Analyzing circuits using loop rule and junction rule.

Net force on a moving charge in electric and magnetic fields: $\vec{F}=q\vec{E}+q\vec{v}×\vec{B}$

A Charged Particle Circulating in a Magnetic Field:

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| **Magnetic Field of a Long Straight Wire:**http://edugen.wiley.com/edugen/courses/crs1650/art/math/halliday8019c29/math011.gifhttp://edugen.wiley.com/edugen/courses/crs1650/art/math/halliday8019c29/math069.gif |
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| **Faraday's Law of Induction** and  |
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| **Lenz's Law.**  |
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