PHYSICS 112
Spring 2013

Faculty: J. P. Hannon BRK 336, Ext. 5245
email: hannon@rice.edu
Office Hours: Tue. 2-4:30 PM, Fri. 2-4 PM

Text: Serway and Jewett - *Physics for Scientists and Engineers with Modern Physics*, Volume 2 (8th Edition) - contains chapters 23-46
[also OK: SJ - *Physics for Scientists and Engineers* (8th Edition) - contains chapters 1-39]

Extra credit reading: Feynman - *The Pleasure of Finding Things Out*

Additional References: Feynman - *The Feynman Lectures on Physics*, Vols. I & II

Web page: http://www.owlnet.rice.edu/~phys112/

In Physics 112 we'll study the theory of electromagnetism. The electromagnetic force is the force which binds electrons to protons to form atoms, and atoms to atoms to form molecules and solids. This is the fundamental force for chemistry and biology, and the most important force in our lives. As we'll see, the theory of electromagnetism is complex and rich, with remarkable consequences, such as electromagnetic radiation (light!).

Physics 112 will parallel Physics 102, but will be more theoretical and mathematical, and will have a different format. There will be more emphasis on homework, and exams will be take-home exams. The work load will probably be somewhat higher.

The Physics 112 lab will also be run separately. It will be set up with flexible hours, and will include 7 experiments (rather than 6 as in Physics 102). Dr. Stan Dodds is in charge of the lab.

1. Grades in this course will be determined as follows:

Lab	15%
Homework	40%
Exam 1	10%
Exam 2	10%
Final	25%
	100%

Note homework problems are 40% of your grade. If you want an A or B, do the problems!

2. Homework problem sets will be assigned at intervals (≈ weekly) and must be done under the Honor System subject to the following:

   You may discuss the problems and obtain aid from others. However, solutions from previous years must not be consulted, and solutions must not be directly copied from any source.

   The homework papers you hand in should finally be the result of your own thought and effort. Detailed solutions to each homework set will be put on the web after the problems have been turned in (http://www.owlnet.rice.edu/~phys112).

3. Homework should be turned in to box labeled "Physics 111/112 Homework" located on the 2nd floor of Brockman Hall before 5:00 PM on the due date (normally Tuesdays). Late homework will be counted off 20% for each day late, unless excused by illness or some other valid reason. Late homework, excused or otherwise, should be turned in to me, not put in the homework boxes. Graded papers will be returned in class.

4. Help sessions will be held for each problem set, meeting on Thursdays 4-5 PM in HRZ 212 unless announced otherwise. [Following the midterm recess on March 28-29, the last two tutorials will be on Tuesdays 4-5 PM in HRZ 212]

5. All exams will be take-home exams and are tentatively scheduled for the periods of February 13 - 19, April 5 - 11, and for the final exam, April 24 - May 1.

6. Note: Course material from previous years (Homework and Exams) should not be consulted unless it is placed on the course web page.

7. Extra copies of handouts will be available in my office.