Physics 221, Section 007  
Fall 2011 Laboratory Syllabus  
Course Information  
Lecture: MWF 1:25-2:15, Nielsen 415  
Recitation: W 8:00-8:50, Nielsen 608  
Laboratory: W 9:05-11:00, Nielsen 508  
Instructor: Dr. Yuri Efremenko, yefremen@utk.edu, Nielsen 503  
Teaching Assistant: Santiago Munoz, smunoz@utk.edu  
(Office hours by appointment. Note: the tutorial center is in Nielsen room 201)  
Physics Labs Website: http://www.phys.utk.edu/physlabs.html  
Your grade in Lab/Recitation is 20%, from class participation 10% and 70% from lab reports  

Book:  
The laboratory manual: Selected Introductory Physics Experiments by Dr. James E. Parks. ISBN 978-0-7380-3083-8 and is available at the UT Book and Supply Store. Please make sure to bring this book to every laboratory session.  

Lab Reports:  
You are expected to hand in your lab report the following session after which it had been assigned. If you do not come to the lab session, even if you hand in a lab report you still get 0.  
Late work & Missing work:  
For late work you would get a 10 point deduction for each day it is late. Missing work means you get 0.  

What we do in Recitation and Laboratory  
For recitation I'll review things you've learnt in class, discuss some problems and discuss the following laboratory experiment. If you have any questions that like to be answered or topics to be discussed please contact me, otherwise I'll chose material that I feel necessary.  
Please review what you'll do in the lab session. You will work in groups while performing Experiments and partners will collaborate in filling out the data sheet. At the end of the lab, the Data sheets can be printed out and attached to the reports that must be written individually.  

The Lab Report:  
Each lab report will be graded (total 100 points) with the section and point breakdowns given below.  
A. Title page (10 points):  
It should include  
Your Name  
Name of experiment  
Date of the experiment  
Collaborators  

B. Theory (10 points):  
In brief describe the theory behind the experiment. This will generally take a paragraph or two. Write down the key formulas defining all the variables with units. This will help you with associating them. Also write briefly what this experiment does and how it does it. Also this is where you write the hypothesis of the experiment
C. Tables and Graphs (30 points):
1. Data tables: The original or photocopies of the original data sheets. Don't forget labels, units, and uncertainties! I'll initial your data sheets before you leave, please include my initial in the report.
2. Graphs: should include a title (remember Y-axis vs. X-axis), and axis labels with appropriate units. If straight line fitting is performed on the data, either by hand or with a linear regression program, please write the obtained equation in the form of y=ax+b. Make sure to add/draw in the regression line.

D. Calculations, including Error analysis (30 points):
Please outline your calculation briefly. Do not just write your final result. I will indicate whether error analysis is necessary in each lab. Please follow the steps of error analysis we learn.

E. Conclusions (10 points):
This should include a brief discussion of the main findings. For example: "We found that there is a linear relationship between the measured variable ... and ... This can be seen from the graph and is predicted by the ... theory." Also state whether your results agree with expectations within the uncertainties of the measurements. If you don't feel your experiment was successful, explain why this may be the case. Discuss the main sources of error and problems.

F. Questions (10 points):
Answer all questions in the corresponding section of the lab manual unless otherwise specified.

Students with Disabilities:
Students with disabilities should contact me as soon as possible in order to make necessary accommodations.

Classroom Policies:
Please respect your fellow students and please respect me. Do not come to class late. Do not talk when I am instructing. Turn off your cell phones ringers, beepers, and MP3 players and pay attention. I’m here to help you.

Attendance
Lab attendance is mandatory. I expect you to show up on time for every recitation and lab session. Do not be late. If you must miss lab due to extenuating circumstances (ie. serious injury, illness, or a death in the family) it is your responsibility to contact me as soon as possible. I may allow you to make up the laboratory during the same week.

Course Outline
The schedule of experiments can be found online at http://www.phys.utk.edu/labs/Fall%202011%20P221%20Schedule.pdf

If this schedule changes, I will notify you by e-mail.