PHY 241
Lab 1

Measurements and Errors

For the first lab, the intent is to introduce you to a few concepts and skills that you will use throughout the semester. You will be led through a variety of simple measurements and calculations with discussions of error analysis and reporting. In addition, you'll get to practice the fine art of rough estimates.

You will measure:
- The mass of a few objects using a triple beam balance;
- The sides of the blackboard using a meter stick;
- The sides of the blackboard using a measuring tape;
- The width of an objet using a caliper.

Mass measurements:
1) Zero out the triple beam balance.
2) Put the first object on the scale, and zero it out again.
3) Read the measurement.
4) Estimate an error on the measurement.
5) Write out the result with the appropriate sig figs, error, and unit.
6) Repeat the steps for a second object.
7) Estimate the value of the mass of the sum of the two objects combined.
8) Put the two objects together on the scale and measure the mass.
9) Compare this value with what you obtained in step 7.

Blackboard measurements:
1) Measure each of the four sides of the blackboard using the appropriate tool.
2) Calculate the perimeter with the appropriate sig figs, error, and unit.
3) Calculate the area with the appropriate sig figs, error, and unit.

Caliper measurement:
1) Get familiar with the functioning of the caliper.
2) Insert the object you are measuring.
3) Read the measurement from the caliper
4) Write out the result with the appropriate sig figs, error, and unit.