

## Physics 183/184 Laboratory Spring 2004

### How to Write a Regular (Weekly) Lab Report

Your Regular or "weekly lab" report consists of three parts. Part 1 is your Pretest, which goes on a separate piece of paper. Part 2 is the original data and goes in your lab notebook and Part 3 is the report and is also to be done in your lab notebook.

#### **Part 1: 5 minute quiz.**

At the beginning of the laboratory, students will be given a 5-minute quiz. It will consist of two questions concerning that day's lab. You must come to class on time, as no late quizzes will be given. **It is advisable that you read the material in your lab manual and your textbook before you come to class.**

**DO NOT WAIT UNTIL JUST BEFORE YOU COME TO CLASS TO DO THIS.**

#### **Part 2: Original Data. (Make carbon copy)**

The original data sheet contains the Experiment Title, the date, your name, and any partner's names. The Original Data must be data you recorded in class as you performed the experiment. i.e. the actual measurements **WITH NO CALCULATIONS. Record the units. Show measurements with probable errors. Be sure to hand in yellow copy of your original data before you leave class.**

#### **Part 3: Report (No copy needed) DO NOT SKIP THE YELLOW PAGES**

The parts of the report are as follows:

### **BODY OF THE REPORT**

1. **Objective:** Write one or two sentences telling what the purpose of the experiment is. What was it designed to accomplish? **(5 points)**
2. **Apparatus:** Give a brief, clear description of the apparatus used. A sketch may be preferable if the apparatus is complicated. **(10 points)**
3. **Original Data:** If your original data is legible you may refer to the page in your notebook where the data is recorded. If your original data is not neat, you will have to re-write it and place it at this point in your report. Stick to original data if you must re-copy it. No calculations go in this section. **(20 points)**

4. **Sample Calculations and Graphs:** An example calculation of each unique (different) calculation used in working with your original data must be shown in this section of the report. A sample calculation consists of the following parts.

a. The formula.  $F = (m)(a)$  for example

b Plug numbers and units into formula.

$$F = (5.00 \text{ Kg})(8.00\text{m/s}^2)$$

c. And finally the result with proper units.  $F = 40.00 \text{ N}$

d. Each sample calculation should appear in your report on one continuous line, which may be continued on to the next line if the calculation exceeds the width of the paper. Each sample calculation must be set apart from other sample calculations so it is clear which is which. Sample calculations must also be set apart from any text so as to make clear which is a sample calculation and which are comments or information about that particular calculation. (See below)

$$F = (m)(a) = (5.00 \text{ Kg})(8.00\text{m/s}^2) = 40.00 \text{ N}$$

**Also remember units are to be carried throughout all intermediate steps until the final answer.**

Other types of sample calculations that must appear in this section include, but are not limited to; Calculations of the slope of a straight line, per cent error or difference calculations, averages etc.

Graphs must have both axes labeled with proper units and must have a title at the top of the graph showing what the graph is presenting, including units used for both axes. (Note a title for a graph is **NOT** the title of the experiment.)(**25 points**)

5. **Results:** The result is the answer to the objective. **It may also be something that your instructor says to include at his discretion** . It could consist of a table if more than one result is expected. For example, if two or methods are used to get the same results, then answers from both methods must be included in this section. Remember to indicate which result comes from which method. Per cent error and per cent differences from the " Best Experimental" or "True" value should appear here too. ( **10 points**)

6. **Conclusions:** Give you opinion of what can be concluded from your results. If the objective was to prove a law using our experimental results, state whether that data supports this law within error limits. Give most likely sources of experimental errors that could have occurred while collecting data for the experiment. **Remember personal errors (As listed in your lab manual) are not considered experimental errors in the context of this lab. THEY ARE MISTAKES AND NOT EXPERIMENTAL ERRORS.(10 points)**

*Note: Each section it to be labeled as such and set apart from every other section so as to make it clear where one section of the report ends and the next section begins.*

**Note In a weekly report no Theory or Procedure section is required. However in your Formal Report these as well as other additional sections in the report are required.**