

## FORMAT OF LAB REPORTS

### Heading:

Name: Lab Partners Name

Lab Section

Experiment Number

Date of Expt.

Title of Experiment

### Abstract:

This is a statement that **summarizes** the objective and **results** of the experiment. It should be brief: a paragraph or so. It will normally indicate the chief points illustrated or verified by the experiment.

### Theory:

Usually the theory is given in the lab write-up. Rather than merely copying form this, it is much better to summarize and to give the working equations, and units. If the theory is simple and direct, write it in your own words. If it is lengthy and involved, try to summarize it in a clear and direct way.

### Outline the procedure.

### Data:

An ordered display of data, preferably in tabular form, should be presented in the report. If your original data is not in proper form, you may copy it for the report, but include your original data sheet in the report. Be sure all entries are clearly identified, including the proper units.

### Computations:

To show clearly the computations used in reducing the data, write first the formula, then give a sample calculation, using numbers taken from the tabulation of your data, including the units. Results of repetitive calculations of the same type are best shown in a table. Remember to use the correct number of significant figures. Use power - of - ten (scientific notation) for large or small numbers ( $2.05 \times 10^{-4}$  rather than 0.000205). For data presentation in the form of a graph, follow the instructions given in the orientation lab.

### Results:

Briefly summarize the principal results obtained from the calculations. State the values and the numerical uncertainty of your findings by using the procedures given in the "Treatment of Errors" section. For example, the experimental value for "g" was found to be:

$$\text{Acceleration of gravity } g = (9.8 \pm 0.2) \text{ m/s}^2$$

Frequently you will want to compare your result (F) with a standard value ( $F_o$ ). A good quantity to compute in this case is "percent discrepancy" found by:

$$\text{Percent - Discrepancy} = \frac{|F_1 - F_2|}{F_M} \times 100\%$$

If you are comparing two values of "F" found in different ways ( $F_1$  and  $F_2$ ) find the "percent difference" given by:

$$\text{Percent - Difference} = \frac{|F_1 - F_2|}{F_M} \times 100\%$$

Where  $F_M$  is the mean of  $F_1$  and  $F_2$ . Round off percent errors and differences to two significant figures.

### Discussion:

A final brief paragraph of conclusions or a discussion is desirable. Its content will depend on the nature of the experiment and on the results. If, for example, the percent error of a result is substantially larger than expected one may consider probable causes (sources of error). Such comments may be quite revealing of your understanding of the experiment. If the experiment pointed to certain conclusions, these may be given. One may also suggest ways in which the experiment could reasonably be improved. Some of the lab write-ups include questions. They should be answered in this section of your report.

**Note:** Your instructor will consider the above format important when your laboratory report is graded. The following will be considered important (in addition to the physics) in grading your reports:

1. Neatness
2. Composition
3. Grammar
4. Thought/Originality in presentation
5. Spelling