

## Report Format for Physics 203L

Please keep this list handy so that you can refer to it when taking data and writing your lab report. All reports must be **typed**. Reports must be neat, well organized, have good grammar and correct punctuation. Things must be done in a logical, proper order. Also, always use complete sentences when writing discussions or answering questions. Please remember that an unclear statement is considered wrong, always. Please spread your report out. It looks much nicer when there is ample room between the parts. Never cram stuff together.

Unless otherwise stated, all lab reports will have the following features:

### **Cover Page:**

Your cover page should include the following information:

- The title of the experiment
- The authors of the report; these are the people that wrote the report and who will get credit for it.
- The course name and time; for example, Physics 101 Monday at 8:00 AM
- The date the experiment was performed.

### **Abstract:**

Here you will tell me the purpose of the experiment. This is a few sentences explaining what you are trying to accomplish in this experiment. The abstract goes after the cover sheet and before the data.

### **Equipment:**

List all the apparatus that you used during the experiment. If some piece of data gathering equipment is used (oscilloscope, computer, etc.) list the make and model number. Remember, others may want to duplicate your results, and they need to know what gear you used. Write this as a list not a paragraph.

### **Procedure:**

**List** all the steps that you took to complete the experiment. Do not copy the procedure of the lab manual as you will not be giving credit for copying.

### **Data:**

Here you will list, using tables, all the values (with units) that you have measured. **List only the values that you measured; any value that is calculated does not belong here.** The “data” must have correct units, proper significant figures and be organized in a neat fashion.

## **Calculations:**

In this section, you will use your data as written in the data section, to complete required calculations. Keep as many digits as your calculator allows, to obtain a more accurate answer. We will take care of significant figures and instruments' precision in the result section.

### **Calculations must be typed using an equation editor.**

The following steps provide the acceptable format for calculations:

- Write the equation first in symbols.
- Substitute the numbers using correct units.
- Finally write the numerical result.
- For repetitious calculations, a single sample calculation of the type described above suffices.

## **Uncertainty:**

You must include uncertainties for all your calculations as described in the lab manual. Do not just list the uncertainties in the equipment but calculate all the uncertainties for all calculated values. The uncertainty calculations are worth 10% of the report grade.

## **Graphs:**

The [graphs](#) will need to be completed in Excel. Make your graphs large. It is often best to devote an entire page to the graph. Also, graphs must have titles, the axes must be labeled (have titles) and the axis must have units. Finally, the graphed information must be presented in an easy to understand way.

## **Results:**

List all your results in tables with units. **Only list the results. Do not include the answers to the questions here.** The results must have correct units, proper significant figures and be organized in a neat fashion.

## **Percent Error and Percent Difference**

If necessary, calculate the percent error or the percent difference between your experimental results and the expected values. You should do this before leaving the lab in case you need to retake data.

If the percent error or percent difference are too high then it is expected that you:

- Recognize the problem. If you fail to recognize that a problem exists, or if you just ignore it, you will surely receive a bad grade on that report.
- Fix the problem if possible, or at least provide an intelligent explanation for why there is a problem.

**Questions:**

Some of the experiments have questions throughout the experiment and/or at the end that you must answer. Include those answers in this section. Please use complete sentences and proper grammar.

**Conclusion:**

Report your findings. Give a brief explanation of your results. What did you learn from the experiment?

Finally, this document covers most of the formatting and presentation information that you will need when writing a lab report. But, of course, it cannot cover every possible situation or answer every possible question. So if you have questions about a formatting or presentation issue, then please ask.