

**Lab Report Format**  
**Physics 221/222 – Physics Lab for Science and Engineering**

**Required Editing Specifications:**

- Do not include a cover page.
- Text in the report should be typed in 12-point Times New Roman font and double-spaced with 1-inch margins. Reports should be written in English and in a professional vernacular.
- Any equation stated in the text of the report should have an associated “equation number” to serve as a reference through the remainder of the report.
- The following block of information must be typed on the first page in the upper-left corner:

Name: *Last Name, First Name*

Partner: *Last Name, First Name*

TA: *Last Name, First Name, Section: Number*

*Name of Experiment*

*Date Experiment was performed*

**Introduction (10 Points):**

State the objective(s) of the experiment and briefly describe the procedure. What do you want to learn, and how do you plan to learn it? The basic principles being studied should be included.

**Theoretical Analysis (15 Points):**

Starting from basic principles, derive the equations that will be examined in the experiment. Your TA will inform you of the particulars for each experiment. This section may be handwritten neatly in ink.

**Data Plots/Charts (10 Points):**

Plots should include:

- Figure Number
- Figure Title
- Axis Labels with Units

Individual data points should not be connected by lines that don't serve an analytical purpose. If an experimental dataset is fit to a mathematical function, that function and its numerical parameters must be displayed on the plot.

**Results (10 points):**

The results of the experiment should be displayed in a table and/or chart and/or stated concisely. All data plots and charts should be referenced. The experimental results of the experiment should include uncertainties when applicable. The “percent difference” between your experimental results and the theoretically predicted results should be included. (If you are comparing your results to a well-accepted constant, “percent error” should be used instead.)

**Discussion of Results (30 Points):**

What was learned from the results of the experiment and how did these lessons meet (or not meet) the original objective(s) of the experiment? Relate each result back to basic principles and discuss the underlying physics. Sources of experimental error leading to uncertainties must be discussed. Any suggestions on ways to improve the experiment should be explained here.

**Post-Lab Questions (15 Points):**

Type each post-lab question prior to typing your answer. If calculations are necessary, they may be handwritten neatly in ink.

**Raw Data/Sample Calculations (10 Points):**

Before departing from the lab on the day of the experiment, your TA must initial your datasheet or lab notebook. This initialed datasheet (or copies of the notebook pages) will be attached here. You may also attach any other raw data or calculations that you deem relevant.

You will provide one example of a numerical calculation for each equation derived in your “Theoretical Analysis” using your real experimental data. Units should be included and verified by dimensional analysis.