University of Mississippi Dept. of Physics and Astronomy
General Physics Lab Report Format

Purpose:

As part of your experience in the physics lab, you need to be able to present information in a concise but detailed and scientific manner. By writing lab reports, you will demonstrate your understanding of a few of the experiments performed. We ask that students follow this general structure when composing their lab reports.

General Guidelines: (10 points)

- No cover sheet.
- The upper left corner of the first page must contain the following:

  Last Name, First Name
  Partner: Last Name, First Name
  Experiment Title
  TA: Last Name, First Name, section #
  Date Performed: Month, Day, Year
- Typed, 12 point, Times New Roman font, double spaced.
- Use proper grammar and complete sentences.
- Each section (see below) must contain a heading followed by the requisite information in **paragraph** form. Include sketches where necessary. All mathematical expressions may be written neatly in pen.
- Use of words such as "should" often indicates lack of confidence in what is being stated. Be confident in your statements; avoid using "should" where possible.
- Equations may be written once, numbered, and referred to by number elsewhere in the report (i.e. "As seen in Eq. 1….").
- Attach Datasheet to report as last page before turning in hard copy.

Objective: (10 points)

State the objective of the experiment. This is the reason for performing the experiment. **Do not copy the lab manual.** Include equations to be utilized and/or verified in this section. Identify independent (what you will change) and dependent (what changes as a result) variables, think big picture, these may be different for different parts but are part of the principle equation being examined.

Data and Analysis: (30 Points)

State which data you collected during the experiment and how you collected it (this should only be a paragraph at most, you do not need to repeat the entire procedure; i.e. "The motion of students moving around the room, and the motion of a bouncing basketball, was recorded using a motion sensor). Include tables providing the data. Include mathematical expressions for derived values (e.g. manipulated equations, average values, or percent error). **All data must have units included in column headings.** Construct graphs that take the data you collected and arrange them according to the theoretical models being tested. Be sure to show this theoretical model (i.e. write the equation you used to compare your data). Indicate the relevance of slopes and intercepts of graphs. **All graphs must have titles, axes labels, and legends.** Units must appear in axes labels. Include a sketch of the complete apparatus and label each part.

Conclusion: (30 Points)

Address the premise stated in your objective. Explain, in your own words, the physical theory being explored with the experiment. Your discussion of the theory should include both the concepts being considered as well as the equations being used. Discuss the relevance of your data to the theory. Be sure to include any equations used and how well your data supports the theory. Discuss the success/failure of your experiment, whether you are convinced the theory is valid, and what students may do differently to improve this experiment in the future. Address sources of error in the experiment. Include percent error when applicable. "**Human error" may be addressed but must not be the only source of error discussed** (improperly collecting data and/or poor math skills is **not "**human error", it's sloppy work)**.** The conclusion must be ½ page minimum, may be extended by your TA, and may need to be longer to adequately address everything listed above.

Questions: (20 Points)

Type each of the questions as posed on the datasheet you received in lab. Type your answers to the conceptual questions and include a labeled sketch in pen if needed. Mathematical work may be written neatly and clearly in pen. "Just the answer" will receive zero points. You must justify your answer using the theory and equations from the experiment to get full credit.

General Physics Lab Report Checklist

General Guidelines

- ❑ Last name, First name
  Partner: Last Name, First Name
  Experiment Title
  TA: Last Name, First Name, Section #
  Date Performed: Month, Day, Year
- ❑ Typed, 12 point, Times New Roman or similar font, double spaced
- ❑ Section Headings
- ❑ Datasheet attached as last page before turning into basket
- ❑ UPLOADED TO SAFEASSIGN UPON COMPLETION!

Objective

- ❑ Objective Stated (3)
- ❑ Equations included (3)
- ❑ Independent and Dependant variables identified (4)

Data and Analysis

- ❑ Collection method (5)
- ❑ Data tables (5)
- ❑ Titled graph with labeled axes (if applicable) (5)
- ❑ Calculations (5)
- ❑ Significance of slopes or y-intercepts discussed (5)
- ❑ Sketch of Apparatus (5)

Conclusion

- ❑ Theory explained; including concepts and equations (10)
- ❑ Relevance of data (did it support the theory?) (5)
- ❑ Success/failure discussed (5)
- ❑ Error discussed (5)
- ❑ Improvements (help us make this lab better, be specific) (5)

Questions

- ❑ Retype (or copy and paste) questions
- ❑ Answers backed up with theory/data/equations/sketch