

Howard University

Department of Physics and Astronomy

Introduction

Physics is an experimental science. Laboratories offer an ideal opportunity to learn and strengthen, by means of actual observations, some of the principles and laws of physics that are taught to you in general physics lectures. You will also become familiar with modern measuring equipment and computers and learn the fundamentals of preparing a report of the results.

1. General Instructions

1. Go to <https://physics.howard.edu/undergraduate/general-physics-lab-experiments>
2. Here you can find:
 - a. Your syllabus by clicking on the yellow button.
 - i. Here you can find all the pertinent information regarding the lab schedule. Scroll down to your section.
 - ii. Your reports are due at the deadline date and time specified in the syllabus.
 - b. Your laboratory handouts by clicking on the laboratory name.
 - i. This is where you can find information on the theory behind the experiment and the data sheets you need for your report. Make your own datasheet if a certain handout has none.
 - c. The laboratory video by clicking the URL next to the laboratory name.
 - i. Videos are typically composed of three parts: Theory, experiment, calculations.
 - d. Watch the video, note down the data from the video, and write your report.
 - e. Submit your report to your lab teaching assistant's email by the specified deadline in the syllabus.
 - f. Your lab teaching assistant should reply to your email acknowledging receipt. Communicate with rsanchez@howard.edu if this is not the case.

2. Report Format

The laboratory report must include the following:

1. **Title Page:** This page should only carry the student's name, ID number, the name of the experiment.
2. **Objective of the Experiment:** This is a statement giving the purpose of the experiment.
3. **Theory:** You should summarize the equations used in the calculations to arrive at the results for each part of the experiment.
4. **Apparatus:** List the equipment used to do the experiment.
5. **Procedure:** Describe in your own words how the experiment was carried out.
6. **Calculations and Results:** Provide one sample calculation to show the use of the equations. Present your results in tabular form that is understandable and can be easily followed by the grader. Use graphs and diagrams, whenever they are required. Include the

comparison of the computed results with the accepted values together with the pertinent percentage errors.

7. **Sources of Error:** Give a brief discussion for the sources of the errors.
8. **Conclusions:** Relate the results of your experiment to the stated objective.
9. **Data Sheet:** Attach the data sheet for the experiment.