

Instructions for Experiments

1. Read each experiment thoroughly before coming to lab. Quizzes are likely.
2. Come prepared to ask questions.
3. Review the pertinent material in the Physics Lab Help-Ware software on the Apple computers before lab. Also review pertinent material in your textbook.
4. Work in groups of 3 whenever possible unless instructed otherwise.
5. Discuss the procedures and analysis carefully with your group.
6. Think before doing. Consider ways you can reduce errors and uncertainties. If your percent difference comes out large go back and re-examine your measurements and calculations.
7. Try to get as much of the analysis done during the lab period as you can.
8. Take precautions for safety. Also handle equipment carefully to prevent breakage.

Instructions for Lab Write-ups

1. Each student should do their own write-up in their own words; only the raw data and any calculations coming directly from the data should be the same on groupmates' write-ups.
2. Don't forget to report units with your measurements.
3. Indicate the quantity and units on each axis of your graphs. Spread graphs out to cover as much of the page as is reasonable.
4. Show all calculations, including calculations of slopes of lines and calculations of percent differences.
5. Report uncertainties and percent errors honestly. $\% \text{ error} = \frac{\text{measured} - \text{accepted}}{\text{accepted}} \times 100\%$.
Don't report 0% difference. Percent difference is meant to indicate the accuracy of your measurements and there is *always* some error or uncertainty, so don't record 0% as your difference; instead, if it first seems to be 0%, use some other method to estimate the error.
6. Make your drawings and explanations so clear that a layman could understand them (and so you can still understand them in three years). Sketches should show the important aspects of the operation of the apparatus. Labels are good.
7. An important goal is clear communication.
8. Write a conclusion section for each lab summarizing what you learned and containing your evaluation of the experiment. In your conclusions indicate which special steps you took in the procedure to minimize errors. What would you do if time allowed another trial?
9. Neatness counts. Please staple multipage write-ups.