

## INTRODUCTION

9/7/05

The lab part of the course consists of fourteen laboratory experiments. The experiments are done one per week in a three hour laboratory period.

You will need a bound lab notebook for recording and analyzing your experimental results. The recommended lab book is a spiral bound quad ruled, 8 1/2 x 11 notebook with at least 70 sheets. Your name and laboratory section should be written on the front cover. Leave a few pages blank for an index. Sketches and diagrams may be drawn directly in the notebook. However, for more detailed graphs you should use graph paper, and then tape the finished product into your notebook. You will also normally need a calculator and straight-edge.

You are expected to do the lab work during your scheduled lab period. If very special circumstances make it impossible for you to be present at the scheduled time, you may make arrangements with your instructor for an alternate time to do the lab. These arrangements must be made prior to the scheduled lab period.

Make you sure you come into the lab with a copy of the lab writeup. The lab writeup should be read and studied before you come into the lab. Some experiments require that calculations be done prior to the laboratory period.

Lab notebooks need not be elaborate, but several points are worth noting:

1. Your lab notebook must be self contained. It should be possible for another person to read your notebook and be able to understand what you did, without reference to the experiment writeup.
2. The notebook should contain explanations of what you are measuring and of how the measurements are being done. You should always include diagrams of the circuits you are using. Whenever you measure some quantity or determine the value of some parameter from your measurements, there should be a few sentences explaining how you did it.
3. Although neatness is not formally considered in grading, a sloppy notebook often indicates that you did not have a very clear idea of what you were doing. Conversely a well-organized notebook conveys an image of competence, and is considerably more pleasant to grade.
4. Read and follow the suggestions on tabulating data and plotting graphs which are given in the appendix.

In grading the lab books, the following factors will be taken into account:

- a) Have all parts of the lab been completed?
- b) Is the lab writeup clear and understandable?
- c) Were the measurements done carefully, and are the results reasonably accurate?
- d) Are the tables and graphs well organized, and do they contain all the relevant information?
- e) Have you explained how the various quantities were measured and how the analysis was done?
- f) Are the conclusions clearly stated?

But what about how your lab grade is determined? Your professor(s) will explain lab grades during the first lab. Keep in mind, however, that your overall understanding of the material in the lab is of equal importance to your lab notebook: try to learn something. We will help with this matter. Most of all, don't sweat the grades. Labs are designed for interactive learning. You will have as much opportunity as you need to ask questions and receive help.

Finally, enjoy the labs! Physics is an experimental science: make it yours. Suggestions for improving the labs are always welcome.