Phys 1220 Lab Report Expectations

Hand only one report in for the group which worked at the particular lab.

1. Add your prelab predictions to the report. We need the predictions to see how you re-evaluated them in the discussions.
2. Add your raw data. You will lose points if you have changed your raw data in any way. For example by erasing them or making them unreadable or show me only a spreadsheet but no hand-written data or the raw form of the data records. Sometimes one needs to note that certain data are known to be invalid. In such a case, cross these data out neatly so that they can still be read and comment next to them why these data should be discarded from further analysis.
3. For data shown, please add “Table 1” or “Figure 1” to the table or figure added to the document. If more than one table or figure are added in the document, they should follow the numerical order as the order they appear in the document.
4. The data analysis methods should be described concisely. In particular, how the raw data is treated, how the resulting values (such as average value or standard deviation) were obtained. The analysis results should be described in the analysis section, even though they might be in the figure.
5. Start the discussion with a summary statement about your main experimental results/summary/conclusions. Average(s) within their respective errors (usually standard deviations). When too few data have been taken to build the error statistic, it is permissible to use the accuracy of your measuring tool, i.e. the smallest clearly discernible unit one can read on the tool, instead. Continue by comparing this to the values in references (often a value given in the course textbook or lab manual or even research literature) and discuss any discrepancy origins.
6. Continue the discussion by discussing the tasks. Don’t forget to answer the question that re-evaluates your prelab predictions. If your predictions were off and you do not catch that here, you may lose points.
7. When discussing the systematic errors, include whether each error would shift the data to higher or lower values than the value measured and try to estimate the order of magnitude of each error source (sometimes this cannot be done but often one can make reasonable assumptions and arrive at a rough value). Note that there may be many systematic errors present but that typically only two or three of them have relevant magnitude.