Guidelines for data analysis reports

1) Show plots of the best data you have for each portion of the lab. Make the data point markers large enough to be seen, and include error bars. Label your axes, including units, and use font sizes large enough that they can be easily read.

2) Explain how you analyzed the data, and how you extracted the physical quantity that you measured. Include any formulas that you used.

3) Show the results of any fits that you have done. Plot the fitting function on top of the data, including error bars on the data points. Discuss the errors on the fitted values.

4) Explain your error analysis, including the sources of error, how you decided what the errors were, and how you propagated the errors to final quantities. Explain which errors are systematic and which are statistical.

5) Discuss what should be improved to get a more accurate measurement, and how that might be done. This should follow directly from your error analysis.

Guidelines for lab notebooks

1) Each experiment should begin with the title, date, and time.

2) Each time you record something in the notebook, **record the time**.

3) Draw diagrams of how you set up the equipment, take a picture and upload to your notebook.

4) Erase nothing. If you realize you did something incorrectly, make a new entry with the corrected result.

5) Write comments about the things you tried, what worked, and what didn't work.

6) Upload plots to your notebook. Make lots of comments explaining what is shown in the plot.

7) Upload the data files to your notebook. Record an explanation of what the experimental conditions were when you took the data in the file.