PHYS 4780, 6180, 7180, and any other labs taught by R. Ellingson:

Please refer to these notes for ways to improve your Lab Reports.

1. Don't separate a figure across consecutive pages (ensure that figures fit on, and fall entirely on, a single page of your report).
2. Label the axes, including units, on every graph; annotate peaks wherever possible in your graphs.
3. Include a legend for graphs with more than one data set;
4. Include a brief caption with each graph, explaining what is shown and any other essential info.
5. When graphing data sets with distinct axes (x-axes, or y-axes) on the same graph, use an arrow indicating for each curve which is the correct axis to reference;
6. Choose symbols that are sized appropriately and easily distinguished from one another (multiple curves on one graph); when plotting 2 or more curves on a single graph, use lines to connect the symbols – that should make it a bit easier to look at and follow (note this may not be true for small numbers of points that don't really define a "curve");
7. ensure your graphs are legible in B&W;
8. Include page numbers, and number your figures and tables;
9. Check your spelling;
10. Make sure that your "narrative" consists of your explanation, *in your own words,* of what was measured.
11. Include a description of the experimental apparatus, and of any specific measurements that were made as part of the lab.
12. Your lab report should focus on, and emphasize, the measurement, analysis, and understanding of your data. While a brief introduction to the key physical concepts and processes is desirable, the bulk of your time and effort should fall on explaining the specific techniques, analysis, and significance of the data you acquired in your measurements.
13. Ensure that your quantitative values are sensible wherever possible, through order-of-magnitude or "back-of-the-envelope" checks.
14. Use "units analysis" (i.e., include and carry units through any equations) to raise confidence that you're calculating the correct parameter or value.