Lab Report Basics

Lab reports are an important part of engineering and this class aims to help students to write technical reports that convey sufficient details of the experimentation. The reader should be able to understand the basics behind the test procedure, observe the data collected, understand the data reduction/calculations, and gain insight into the results from the discussion.

Each report should follow the same general guideline to provide a consistent form that flows from the background, to the lab, presents the data and calculations, and then discusses the results. Each lab will have a list of items that need to be included in the lab report. Make certain that you include these items! I will field questions about the labs during office hours, but will not pre-grade labs. You need to learn how to edit your own work or to proof read each others work. Your report should have the following sections:

1. Title
2. Introduction
3. Experimental Procedure
4. Results/Discussion/Calculations
5. Conclusion
6. References
7. Appendix

A brief description of these sections:

Title: Place name, group, lap partners, and date in the upper right corner of the page. Place title in the center of the page.

Introduction: Describe what you hope to accomplish by completing the test within the lab.

Experimental Procedure: Briefly describe the methods used in the tests. Make sure that the reader knows what was completed, but leave out unnecessary details. Do not just rehash the directions given in class. The procedure should describe how the lab was completed so that it could be replicated, but not necessarily on the same equipment.

Results/Discussion/Calculations: Present the collected data using tables and figures. Use the appendix for large amounts of information, but make certain pertinent information is included in the body of the report. An example would be a stress-strain curve in a tension tests. Discuss the procedure used to perform the calculation. Provide the necessary equations in the text and sample calculations in the appendix as needed. Indicate the accuracy or uncertainty in the collection of the data and/or the assumptions used in the calculations. Compare to those found by others and/or theoretical predictions.

Conclusions: State whether the tests that were completed were successful and indicate what the lab taught you or demonstrated.

References: List sources of references, if any, cited in your report.

Appendix: Place all long tables, explanatory figures, and sample calculations here. Include items that you think might be helpful to the reader.

Grading

Labs will be graded on a fifty point scale that includes the presentation, writing, and content. Follow the guidelines above and spend five minutes reading over your lab before turning it in to ensure that your final product is reading for grading.

The presentation judges how you format your lab report from the plots to correctly citing references. Following this guide and making certain that you present your work professionally will give you five easy points. Make certain that everything is in proper order and looks good before you turn in your lab reports. ***~10 points***

Your writing skills are an important part of being able to communicate in both the academic and the commercial world. Although this isn't a literature class, you still need to write clear sentences that can be easily understood. Present the content is a clear concise manner to receive full credit ***~10 points***

The content of your lab report is the most important part of the formal lab report. You will be graded on the data you collect, the calculations, plots, and your interpretation/discussion of this data. For full points make certain that you answer all the questions posed in the lab write-ups and correctly interpret the data. ***~30 Points***