Project Report Guidelines

The project report should resemble a journal article presenting the work done. It can be done with your preferred word processor (LaTeX, Word, Open Office, etc.). The overall style should follow general practices presented by the American Institute of Physics AIP Author Resource Center (or https://publishing.aip.org/authors), including properly presented mathematics, figures, and tables. There must be enough detail for a classmate to appreciate the physics involved and have a good sense of how to reproduce or extend the measurements. Bullet-lists are not appropriate. Write good narrative prose. The reports should contain the features below.

Title & Abstract

The abstract is a very brief technical summary of the measurements made and results.

Overview of the project

This should include a comprehensive discussion of the physics behind the experiment, including a presentation of the relevant background theory with a short description of what and how the experiment measures this physics. This should set the context for the details that follow.

Details of the experimental procedure

This should be a detailed discussion of the experimental techniques and procedures used in making the measurements. Explain design choices on circuits built and describe software written to do the experiment. Explain any special experimental techniques employed. Your own diagrams of the apparatus or schematics of circuits used should be integrated as part of this narrative.

Data and Analysis

Present the measurements (or representative samples if much raw data was collected and further processed), preferably in graphical form. Describe the analysis process and the results of the analysis, including any fitting procedures. Apply appropriate error analysis to estimate uncertainties in the results of measurements. Note that good quality versions of graphs in LabVIEW may be exported for use in reports. Using the operate or finger tool in LabVIEW and right clicking on a graph brings up, among other things, an option to export a simplified version of the graph. Choosing EPS (encapsulated postscript) produces a good quality figure that can be included in your report. See below for an example. Other software that produces good technical plots may be used to generate these kinds of figures, too. A mere cut-and-paste screen capture is not appropriate quality.

Conclusion

Write a concluding summary of the chief findings of the project, relating these back to the underlying physics. This is also a place to discuss limitations of the experiment and potential improvements of methods and techniques.

References

Citations (using standard formats) for sources and references referred to in the body of the project.

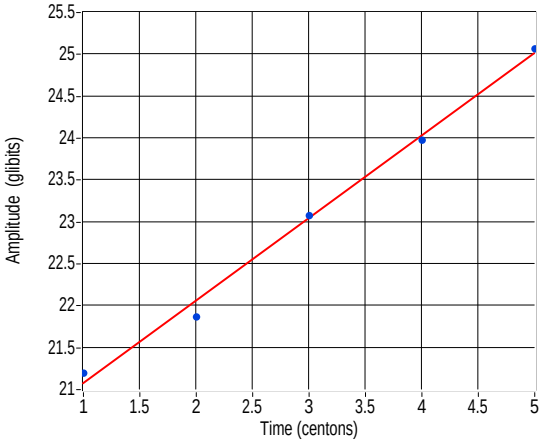

Figure 1: A graph from LabVIEW exported in eps format.

Appendix

One or more appendices may be appropriate for including detailed software (e.g. VI's) developed for the experiment. These should be carefully commented or accompanied by a written synopsis of their functions. An appendix is also a place for perhaps including more extensive data archives that would clutter the main body of the paper but are valuable to the reader.