FINAL REPORT CHECKLIST

General:
Please be sure to focus on the following

- Smooth writing flow (transitions between topics or paragraphs and from one sentence to the next), and clearly expressed ideas
- Accurate spelling and grammar (run spell-check and proof-read!)
- Phrasing what happened in past tense ("parameters were measured")
- Using passive voice (do not use I, we, you, our)
- Formatting equations with Equation Editor
- Using IEEE Reference format
- Formatting Tables, Figures and section numbering as per Final Report Template
- Keep report to less than 20 pages

Title page:

Report for

ECE Class Number
Final Lab Report

Lab Section:

TA:

Prepared by
<Group Names>

Date: December 5, 2006

Abstract:
Summarize in approximately 150-200 words the purpose of the lab project, methods used, key findings, and significant conclusions.

- Stress content not intent (leave out the "why")
- Leave out all extra baggage
- Assume the reader is experienced in engineering but hearing about this project for the first time
- Write the abstract last
- Keep it short (200 words or less … less is more)
- Make quantitative (use results) not qualitative statements
- Don't use equations or other mathematical notation.

Executive Summary:
The conclusions and recommendations are generally the most important aspects of this section. If more details are desired, THEN the reader will go to the body of the report. The executive summary is:

- A summary of the complete report, including results and conclusions, allowing the reader to have a grasp of the entire project
- A longer and more in depth description than the abstract, 1-2 pages in length
- Aimed at the "average" reader

Table of Contents:
As detailed in the Final Report Template

List of Tables:
As detailed in the Final Report Template

List of Figures:
As detailed in the Final Report Template

1.0 INTRODUCTION

The goal of this section is to supply sufficient background for readers to understand and evaluate the experiment and its results without having to read previous publications. Include:

- Purpose (an overview of the lab project goals)
- Problem (why the project was studied, it's importance, what is already known from theory or previous studies)
- Scope (qualitative–what was analyzed and how it applies to the larger engineering design problem)
- Summary (Briefly describe what happened in individual labs and how each applies to the system)
- Subsections 1.1 through 1.6 with detailed description from the introduction of each lab

2.0 METHODS

Make a subsection for each lab. Give a full description of the method used to complete each lab. Include an equipment and/or materials list and step-by-step instructions (graphs, diagrams, or spreadsheets should be included). Insert figures, tables, etc. AFTER they are mentioned in the text, and be sure to mention every figure/table/etc. in the text. Number all figures, tables, and equations. Put captions under all figures and above all tables, and reference everything that comes from a

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book, website, or other source. If detailed derivations, tutorials, etc. are needed, they can be included in appendices. Mention all appendices in the text.

When writing the methods section:

- Describe equipment (part numbers and type/nature/functionality of equipment)
- Describe the process (a step by step of the important actions and calculations in chronological order)
- Describe/explain what parameters were measured
- Discuss potential sources of error (possibly yielding unexpected results, but also possible that it didn't cause any problems in this lab).

3.0 RESULTS

Make a subsection for each lab. Describe the results of the simulations in detail:

- Include plots, tables, etc as needed for clarity and precision
- Always include detailed information on how close results were to what was expected. "The data were within x% of expected values." is good. Include measured and expected responses on the same graph, for instance.
- Be specific and quantitative
- Comment on your results/observations

4.0 DISCUSSION

The discussion presents an interpretation of the data to demonstrate understanding of the experiment(s) and related concepts. The purpose of the discussion section is to **explain, analyze, and interpret**. The significance or meaning of the results should be communicated by:

- Comparing expected results with actual results
- Analyzing experimental error
- Explaining results in terms of theoretical issues
- Relating results to the experimental objectives
- Comparing results to similar investigations
- Analyzing the strengths and limitations of the experimental design
- Summarizing the degree to which the experiment achieved its goals or matched expected observations (quantitatively)

5.0 CONCLUSION/ RECOMMENDATIONS

Remember that many/most people read the conclusions first. This means you should spell out all of your acronyms (such as Frequency Shift Keying (FSK)) here, even though you might have done so earlier in your report. Also, be sure that everything in the conclusion is written "in context", not assuming that someone has actually read the rest of the report. This section should present overall conclusions relating to the original purpose of the study (which was stated in the introduction and should be restated here) by giving:

- A brief description of the lab
- A quantitative summary of the lab (List conclusions in order of importance and link them to information in previous sections of the report. Include a statement of what is known "for sure" as well as any recommendations, such as how to improve performance, etc..
- A quantitative description of how this relates to the "big picture" (how this will impact other portions of the design, state what actions should be taken based on the results of the study)

REFERENCES:

Follow IEEE Format shown in the Final Report Template

APPENDICES:

This is for technical data and details that are beyond what the average reader needs in order to understand your report, such as:

- Derivations of formulas
- Full sets of data (when only part is included in figures in the main body)
- Full circuit schematics (when block diagrams are included in the text)
- Data sheets (especially for internal "engineering" reports)
- Instructions for use, etc

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