

TO: MEEN 364 Students
FROM: Aninda Bhattacharya
Trey Mangan
Andrew Rynn
DATE: 30 August 2002
SUBJECT: MEEN 364 – Laboratory Memos

PURPOSE

The purpose of this memo is to provide guidelines for an acceptably structured and formatted memo for MEEN 364. The purpose should be succinctly stated.

METHOD

This section should contain any necessary theoretical background for the laboratory experiment. This section may contain derivations and/or sketches of the lab apparatus. It should address both the theoretical content of the experiment and the lab apparatus.

PROCEDURE

The procedure should be detailed and complete. One of your peers should be able to conduct the laboratory experiment using the procedure listed in the memo.

The procedure should be presented in a concise (i.e. no paragraphs), numbered or bulleted list.

Things to Include in Every Memo:

- Names of students in group
- Signatures of students in group
- Section number
- Name of TA
- Date lab memo is due
- Well labeled Simulink diagram(s) used in lab.
- Well labeled Labview VI(s) used in lab (include panel and diagram views).
- Any MATLAB m-files or functions used to process data and/or make plots
- Cited references for any figures or text as required
 - The lab manual is an implied source and only needs to be cited if quoted (if a derivation is used from the manual, the lab manual should be referenced and the equations should be retyped – not copied and pasted from the lab manual).
 - Any figure not from the lab manual or of your own creation must be cited
 - Any direct quotes from a source must be quoted – failure to do so is considered plagiarism (this applies to the lab manual as well)
 - Do not only use direct quotes to discuss theory – you must use your own words to discuss the theory.

Guidelines for Procedure:

- Your TA or a peer should be able to follow your procedure and reproduce the results from your lab
- Since the target audience is a peer, detailed instructions on how to create VIs or Simulink block diagrams are not required (you will not be penalized for including them if you so desire)
- Be sure to include any hardware and/or software settings used to obtain results

General Notes:

- Follow this format – deviations will be penalized
- There should be no pen or pencil other than the group's signatures on the memo
- You will not be explicitly penalized for grammatical mistakes and writing style, but your grade will be affected as it impacts the overall presentation

RESULTS

The results should be presented clearly using tables and/or graphs where appropriate. Do not present large amounts of raw data or full-page graphs in the body of the memo, put them in the appendix.

Do not just obtain results, make plots and present them. Think about the most logical way to convey the significance of the results. If you cannot explain the results effectively, they are essentially meaningless.

Be sure to clearly explain any calculations done to reduce and/or analyze the data. Analyze the results from the experiment. Discuss general trends and clearly present the quantities requested in the lab manual.

Plots should be well labeled – title, axis labels, legend when applicable and units. Use appropriate ranges that effectively display the data.

Use the subplot command in MATLAB to display more than one plot per page

Do not insert multiple pages of plots (or code) in the body of the memo. It is often best to embed plots within the text of the memo to aid in the discussion of the results. The embedded plots should be no more than half a page in size. If you feel the smaller plot does not convey the results as well as a larger plot would, provide a larger plot in the appendix.

If you have difficulties embedding legible plots into the memo, ask for assistance. If the plot is not legible, it should not be used in the body of the memo.

CONCLUSIONS

Discuss the significance of the experimental results and explain how the results compare to prior expectations. Try to explain why the results occurred – observations are to be made in the results section. The section is entitled conclusions, not discussion.

If you feel it is best to summarize the lab (very briefly) that is acceptable. However, the summary will not absolve you from the responsibility to make conclusions. The conclusions should indicate thought has been involved. If you do not know why an experiment produced the results it did and can not find any reasonable explanation, it is ok to state that you can not explain the results (it is better to demonstrate you thought about it than to ignore an issue because you cannot explain it).

Do not merely attribute all deviations to “human error” – be specific.

Note: It is acceptable to use the lab apparatus figures in the laboratory manual for your memos. However, any use of the text from the manual without explicit citation is plagiarism.