

## APPENDICES

- 1 References
- 2 Hints on Lab Reports
- 3 Oral presentation format, hints and grading

### APPENDIX A1 REFERENCES

Coughanowr, Donald R., *Process Systems Analysis and Control*, 2 ed., McGraw-Hill, 1991.

Smith, Carlos, and Armando Corripio, *Principles and Practice of Automatic Process Control*, John Wiley, 1985.

### APPENDIX A2 HINTS ON LAB REPORT

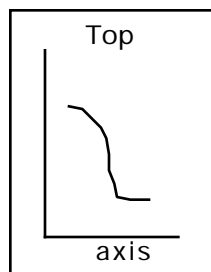
Diagrams, Graphs, & Tables:

The reason for putting diagrams, graphs and tables in a report is to organize information so that it can be easily understood. However, the point that you want to convey in a diagram, graph or table may not be obvious to the reader or grader. You have to tell the reader or the grader what point you want him or her to see in the diagram, graph or table so that he or she doesn't miss that point. A good rule of thumb is to write 2 or 3 sentences for each diagram, graph or table to explain or describe the diagram, graph or table.

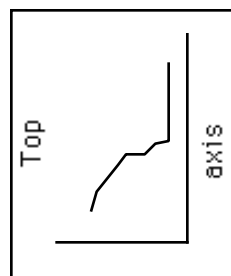
Figures:

Try to size figures so they fit upright on the page. If you have to turn them sideways, remember that the top of the figure goes to the left of the page.

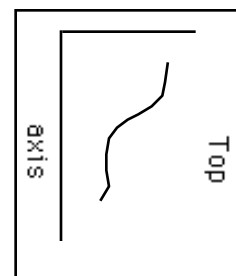
See the examples below.



BEST



O.K.



BAD

Binder:

The reports submitted are to have all your group's reports included in a binder. Put the newest in the front. Include the grading sheet with each report. Separate the reports with tabbed separators that are labeled to identify the reports.

"TJe":

This is known as the "Thomas Jefferson Error." This is marked when you write it's when you mean its. Both words are legitimate words, but they mean different things. It's is the contraction of the two words it is; its is a possessive pronoun that refers to an object.

Contents of "**Theory & Background**"  
(by Jay Ware)

Brief review of system

This should include a schematic diagram of your system with control elements labeled using the standard symbols in the appendix of S&C. The schematic diagram does not have to be pictorial, but is to show the functional relationships among the various components of the system. The block diagram and governing equations or FOPDT equations should be included. Both time-domain and Laplace-domain equations are appropriate. The input and output functions should be clearly defined.

Discussion of Principles behind experiment

This should include the theoretical output for a given input. For examples, the step response for the step input and the steady oscillation response for a sine input. For the control experiments, discuss the theory of P-only or PI control and discuss typical responses. Include tuning parameter equations and discuss how changes in parameters affect the typical response.

Discussion of theory as applied to system

All variables for your system should be defined. Where you know the values of parameters (from previous measurements or reports) these are to be described in this section. You should clearly point out what are the manipulated variable and the controlled variables.

Brief summary of theoretical response

This should consist of an explanation of how the system should respond based on theory. In the "Discussion" section, this theoretical response should be compared with experimental and/or approximate modelling response.

**ENGINEERING LAB REPORT**

**COMMENTS & GRADING**

NAME: \_\_\_\_\_ REPORT DATE: \_\_\_\_\_

GROUP: \_\_\_\_\_ TITLE: \_\_\_\_\_

**CONTENT (50%)**

Title Page -- Name and name of team members? \_\_\_\_\_

Introduction -- Clear reason for report? \_\_\_\_\_

Background-enough to follow report? \_\_\_\_\_

Introduces report? \_\_\_\_\_

Theory (diagrams, equations, calculations) \_\_\_\_\_

Modelling (diagrams, equations) \_\_\_\_\_

Results (tables, graphs, calculations) \_\_\_\_\_

Discussion (follow from Results?) \_\_\_\_\_

Conclusions (follow from Discussion?) \_\_\_\_\_

Recommendations \_\_\_\_\_

Appendices \_\_\_\_\_

Evaluator's recommendations \_\_\_\_\_

Total points (out of 50) \_\_\_\_\_

**FORM (50%)**

Appearance (margins, page #s) \_\_\_\_\_

Type (size, quality, consistency) \_\_\_\_\_

Graphs (clear, consistent) \_\_\_\_\_

Tables (clear, consistent) \_\_\_\_\_

Diagrams (clear, consistent) \_\_\_\_\_

Language (word choice, significant figures) \_\_\_\_\_

Total points (out of 50) \_\_\_\_\_

**OVERALL COMMENTS**

\_\_\_\_\_

EVALUATOR \_\_\_\_\_ **OVERALL GRADE** \_\_\_\_\_

APPENDIX A3**ORAL PRESENTATIONS****ORGANIZATION**

Establish Purpose: What is your objective in making presentation?

Assume your audience does not know anything about your subject.

Write Conclusion First

Outline:

Introduction

Name and name of team members                      State reason for presentation

Background-provide enough to follow talk

Body

Present ideas                      Include strengths and weaknesses

Summary

Summarize briefly                      State conclusion

Questions-be prepared

Select Information Based on Support of Conclusion-KISS

**PREPARATION**

Visual aids

Overhead, charts etc. - approximately 1/minute of talk  
one idea/slide

Include -title slide                      outline of talk                      conclusion

Do not have complete sentences on your slides

Make your letters on the overheads at least 1/4 inch high.

If you can't get a printer to do that for you, do it by hand  
or use the copy machine to enlarge your copy.

Everything on your slide must be important enough to be there.

If it's not important, leave it off. If it's important, make  
it clear and tell your audience about it.

Have a balance among the number of slides with words only, those with diagrams  
or graphs and those with tables

Practice--to have confidence

Memorize introduction and conclusions                      Make them strong

Practice out loud to an empty room

Present to other group members for critique and potential questions.

**DELIVERY**

Communicate                      Stay within time limit

Confidence                      Be in control

Maintain eye contact-maintain eye contact-maintain eye contact

ORAL PRESENTATION GRADE

NAME: \_\_\_\_\_ DATE \_\_\_\_\_  
GROUP: \_\_\_\_\_  
SUBJECT: \_\_\_\_\_

CONTENT (50%)

Introduction

Name and name of team members? \_\_\_\_\_  
State reason for presentation? \_\_\_\_\_  
Background-enough to follow talk? \_\_\_\_\_

Body

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Summary

Summarize briefly? \_\_\_\_\_

State conclusion? \_\_\_\_\_

Questions?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

VISUAL AIDS (20%)

Overhead? \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Include -title slide? \_\_\_\_\_

outline of talk? \_\_\_\_\_

conclusion? \_\_\_\_\_

# Text slides \_\_\_\_\_

# Graphic slides \_\_\_\_\_

# Tabular \_\_\_\_\_

slides \_\_\_\_\_

DELIVERY (30%)

Confidence \_\_\_\_\_

Stay within time limit? start \_\_\_\_\_ end \_\_\_\_\_ time \_\_\_\_\_

Delivery \_\_\_\_\_

In control/evidence of practice? \_\_\_\_\_

Maintain eye contact? \_\_\_\_\_

OVERALL COMMENTS

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

EVALUATOR \_\_\_\_\_ OVERALL GRADE \_\_\_\_\_

**GRADE RECORD**

**STUDENT** \_\_\_\_\_

WEEK	TOPIC	GRADE	DATE	INITIALS
1	INTRO	/5		
2	SSOC	/5		
3	STEP RX	/5		
	WK 3 REPORT	/10		
4	MODELLING INTRO			
5	MODELLING FOPDT	/5		
6	FREQ RX	/5		
MID-TERM	TOTAL POINTS	/35		
GRADE	A   B   C   D   F 31 28 24 23			
7	MODELLING F-R	/5		
8	PLANT VISIT			
9	ROOT LOCUS	/5		
10	MODELLING P-ONLY	/5		
11	P-ONLY	/5		
12	MODELLING PI	/5		
13	PI	/5		
	WRITTEN REPORT	/10		
	ORAL REPORT #1	/10		
	ORAL REPORT #2	/10		
	PRE-LAB	/5		
SEMESTER	TOTAL POINTS			
GRADE	A   B   C   D   F 90 80 70 65			