

King Abdulaziz University

Mechanical Engineering

MEP 365 Thermal Measurement

Technical Report Writing

March 2017

Contents

Types of reports

What is a technical report

How to report an experiment done by you

Contents of a lab report

- 1-Cover page
- 2-Table of contents
- 3-List of figure and tables
- 4-Abstract
- 5-Introduction
- 6-Objetives
- 7-Theory
- 8-Experimental procedure
- 9-Results & Discussion
- 10-Concusions
- 11-References
- 12-Appendices

Remarks

Grading of the technical report

Additional information about technical report writing

Types of reports

1-Executive summary

- Intended for upper level management who will make decision around the report findings
- It includes: objectives, results & conclusions. It may include figures, or references as needed
- Because it is condensed and brief, selection of wording is important

2-Lab. Technical Report

- ✓ Directed to engineering group
- ✓ It documents useful information and results
- ✓ Usually subdivided into: objectives, Approach, Results & Conclusions, References
- ✓ It may contain abstract and appendices

3-Technical report

- For technical audience outside the immediate work group
- Must include sufficient background
- Used in reporting research work

Technical report writing

**How to communicate your ideas
and findings to the reader in a
well accepted format**

How to report an experiment in a technical way

Ask yourself the followings:

- ✓ Why I am doing the experiment? (**the objective**)
- ✓ How I did the experiment? So that someone can repeat the experiment? **What type of equipment I used?**
(**method, and Apparatus or Equipment used**)
- ✓ How to present the results and discuss it? (**Results & Discussions**)
- ✓ What are the conclusions? (**Conclusions**)

Contents of the lab report

1-Cover page

2-Table of contents

3-List of tables and figures

4-Abstract

5-Introduction



Can be combined into introduction,
with objectives included

6-Objectives

7-Theory, mathematical equations and Analysis

8-Experimental procedure (steps)

9-Results & Discussions

10-Conclusions

11-References

12-Appendices

Cover page

- Logo of the institution (optional)
- Title of the report
- Name of the person(s) who prepared the report
- Computer No
- Date of the experiment
- Date of submission of the report

**Sample
cover page**

King Abdulaziz University
Mechanical Engineering Department
MEP 355 Thermal Measurements
Fall 2016/2017

Experiment (1) Thermocouple Calibration

By : Mohammed Ahmed

ID# : 0021111

Date of experiment :

10-10-1438H (09-03-2017)

Date of report :

20-10-1438H (19-03-2017)

Table of contents, list of figures, list
of tables to be done when the
report is almost finished

4-Abstract

- Concise outline of the work done
- The reader has some knowledge of the subject
- State briefly the objective and the findings
- No figures or tables
- Not to exceed around 200 words
- One paragraph
- Usually the last part writing in the report

5-Introduction

- ❖ Background of the subject
- ❖ Utilize the internet or library for a back ground information about the subject
- ❖ Include the objective of the experiment if there is no separate objective section

6- Objectives

One paragraph stating the objective of the experiment

Not to exceed 4 lines.

Example:

Objective

The objective of this experiment is to calibrate pressure transducer using inclined manometer

7-Theory and Analysis

- Fundamental equations
- Laws
- If There are symbols then you must add a list of symbols and their meaning (Nomenclature)

8- Procedure or methods

- Procedure so that one can repeat the experiment again
- Apparatus, manufacturer, model number
- A sketch showing the system
- Steps taking for performing the experiment
- Abnormalities

9- Results and Discussion

Present your results in terms of Tables & Charts

- Every figure and table must have a number and a caption
- Every table or figure must be referred to in the body of the text
- Figures must be clear, axes with units should be shown
- Legend should be clear
- Column heading in tables should be clear with units
- Use proper font size in figures and tables
- Position the curves in the middle of the figure space
- Discussion must be clearly given for each figure and explaining the behavior with reasoning
- As rule write one paragraph for each figure

10-Conclusion

- ❖ Did the objectives mentioned previously have met or not? If not why?
- ❖ More technical than the abstract
- ❖ What is the contribution of your work
- ❖ State clearly your findings

11-References or List of references

- ❖ Any reference mentioned in the body of the text must be listed
- ❖ All the needed information about the reference should be clear to the reader, so for example one can go to the library and pick the book
- ❖ Use accepted style for list of references such as order the list sequentially as they appear in the text

12- Appendices

- Raw data
- Extra calculations
- Some of Equipment or devices catalog data
- Any additional data
- Each appendix must have a cover sheet and a heading stating what each appendix contains

Remarks

Make short sentences

Stick to the 499 guide lines in preparing the report. For example font size is 12. See the recommended margins, titles, subtitles, levels

Each figure must have a caption

Each table must have a caption

Figures and tables must be referred to in the body of the report

Figures and tables taken from a source must be mentioned

Number the pages

Perform error analysis & uncertainty

Make an internet search for the subject and utilize the founded information in your report. Remember to list all references utilized

Do not include exact text from books, notes and internet

Do not copy from exact text from the experiment handout

Additional Remarks

Consider the followings when writing a technical report

- 1-Honesty and truth in whatever you write and protecting and siting others work
- 2-Cost analysis (how much in terms of money labor and time is needed)
- 3-Envieronmental impact (pollution, effect on human, air, water or animals)
- 4-Utilization of your findings
- 5-Safety issues
- 6-Next steps (way forward) or recommended improvements

Grading of the report based on the checklist

More information about Technical report writing

1-Appendix A in your textbook

2-Guidelines for writing MEP499 senior project

3-Course website

4-Internet