

Guidelines For The Preparation of Sessional Report

Ashfaq M Ansery

Technical Report

A technical report is a medium commonly used by scientists and engineers to communicate the results of their work

A Format for Formal Laboratory Report

- Title page
- Summary
- Table of Contents
- Introduction
- Theory
- Experimental
 - Apparatus
 - Procedure

Format cont.....

- Observed data
- Calculated data
- Sample calculation
- Results & Discussion
- Conclusions (and recommendations if any)
- References
- Nomenclature
- Appendices

Title Page

- title of the report
- name of the course
- name of the author
- date of performance and submission
- laboratory group
- identification of the institution or organization supporting the work

ChE 206: Chemical Engineering Laboratory-I

DEMONSTRATION OF BERNOULLI'S THEOREM

Student Name

Student Number

Department of Chemical Engineering

Bangladesh University of Engineering & Technology

Date of Performance:

Group: 1 (A1)

Date of Submission:

Partners' Roll:

This report is my own unaided work and was not copied from any other person

Signed _____

Summary

- The summary has to be brief but to the point
- Do not discuss early history of engineering or the instructions you have received
- Use of symbols, tables and graphs as well as literature references should be avoided

Summary cont.....

A good summary states the

- Principal objective of the investigation/experiment
- Describes the methodology used
- Summarizes the results and conclusions in statements as quantitative and as general as possible

Table of Contents

All the section headings
with page numbers are listed

including summary and
appendices

Table of Contents cont.....

If there are several figures and table you can include a list of them too

example

LIST OF FIGURES

| Figure | | Page |
|--------|--|------|
| 1 | Test arrangement | 6 |
| 2 | Effect of temperature on vapor pressure | 10 |

Introduction

- The central topic of the experiment
- Discuss what prompted you to conduct the experiment
- Finish your introduction with a brief mention of what your work is intended to do.

Theory

This section is a short, concise statement of the essential empirical and theoretical relations to be used in interpreting the data or to be tested by the data

Theory cont.....

- Discuss relevant principles only
- Equations are usually stated, explained (give references as necessary) including pertinent assumptions and limitations

But do not make this section a collection of equations

- Equations should be numbered and symbols defined
- Long derivations are relegated to an appendix

Experimental

- Experimental Apparatus
- Experimental Procedure (or Method)

Experimental Apparatus

- draw (schematic) and describe the apparatus used in the experiment
- include a good description of unusual custom-made items
- standard instruments do not need any detailed description beyond a statement of the instrument and its model

Experimental Procedure

- Do not copy out the procedure of the experiment from the lab notes
- Change this procedure into a report of what you did, using the past tense passive voice for the verbs
(for example: The temperature *was measured*.)

Example

In the laboratory handout, the procedure might be written as “Procedure to determine the density of a steel sphere using a balance”

1. First find the zero reading of the balance
2. Then put the sphere in the left pan and put weights into the right pan to bring the pointer to zero and obtain the apparent mass

This procedure must be changed into a report of what you did as follows:

First the zero reading of the balance was found. Then the sphere was put in the left pan and weights were added to the right pan to bring the pointer to zero. In this way the apparent mass was found.

Observed Data

The raw data as written down in the laboratory is neatly summarized in a table and introduced here

Calculated Data and Sample Calculations

- All the calculated data obtained from observed data should be listed in a tabular form
- Show sample calculations with numerical values taken from the data table

Results and Discussion

Results of the experiment should be presented in tabular form or graphically (if necessary)

Results and Discussion

In the discussion of results all important interpretations that follow from the results and the underlying theory are logically and quantitatively compared

Results and Discussion

- Compare your results with accepted values or literature data
- Compare your experimental results with each other
- Explain errors
- Comment on trends shown by a graph
- The positive conclusions
- Quantitative statements about the accuracy and precision of the results are required

Results and Discussion

- When discussing results you need to point out the trends and explain why they are as they are
- Do the results agree with your model/theory? Why not?
- What experimental limitations were there that might have affected the accuracy of your data?
- Were your results expected?

Conclusions

- Say what you did and what your findings were
- Summarize limitations of your work as well as future work that should be done
- State whether the aim of the experiment has been achieved or not
- Summarize the most important results

Reference

● Citing

- Last name of the author
 - both authors, when only two
 - first author *et al* when more than two)
- Year of the publication
- Page numbers should also be given when the reference pertains to a particular part of a book

Reference cont.....

- Example :

The Sieder-Tate equation (Perry and Green, 1984, Pages 10-16) is an empirical correlation for the forced-convection flow of a Newtonian liquid through a horizontal, circular tube

Reference cont.....

● Listing

- **first sorting:** References should be listed in alphabetical order according to the last name of the first author
- **second sorting:** alphabetical by the last name of the second author and
- **last sorting:** by year of publication

Reference cont.....

● Example : (listing for a reference to a book)

Felder, Richard M., and Rousseau, Ronald W. (1986) *Elementary Principles of Chemical Processes*, 2nd ed., John Wiley & Sons, New York

Nomenclature

- Symbols used in the report are listed alphabetically
- Greek symbols should be at the end of the list
- Units should be included

Nomenclature cont.....

example

H Enthalpy, BTU/lb

m Mass flow rate, lb/h

p Pressure, atm

Δ Wall thickness, cm

μ Absolute viscosity, lb/(ft h)

Appendices

- Anything that would confuse or interrupt main line of thought belongs in an appendix
 - But must be mentioned in the report

INTERMISSION.....