



Chemical Engineering Department



IMAM MOHAMMAD IBN SAUD ISLAMIC UNIVERSITY

## GUIDELINES FOR WRITING TECHNICAL LAB REPORT

- Lab report should include:
  - Cover page.
  - List of contents or Table of contents
  - Abstract
  - Introduction and Theoretical background
  - Experiment procedure
  - Data and result
  - Calculations
  - Discussion
  - Conclusion
  - Reference
  
- Font type Times New Roman.
- Font size 12.
- Double space.
- Heading size should be 12 and bold.
- The page number should be mentioned compulsorily at the right bottom of each page.
- The text should be justified.
  
- Figures: All figures should be numbered with Arabic numerals (1.1, 2.1, ..., n.1). All photographs, schemas, graphs and diagrams are to be referred to as figures. Line drawings should be good quality scans or true electronic output. Low-quality scans are not acceptable. Figures must be embedded into the text and not supplied separately. Lettering and symbols should be clearly defined either in the caption or in a legend provided as part of the figure. Figure number and caption should be typed below the illustration in 11pt and center justified.

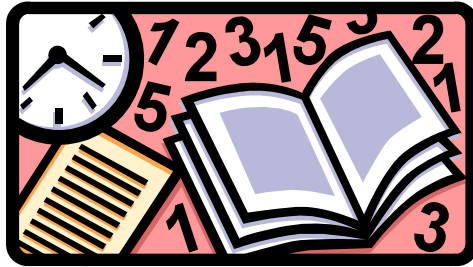
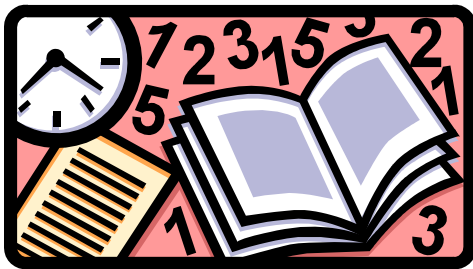
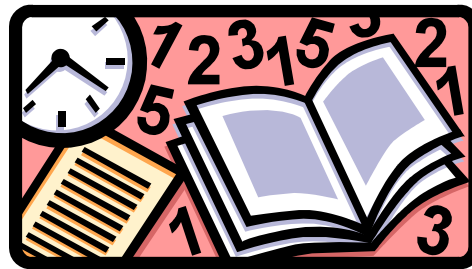


Figure 1.1: Figure style [1]



(a)



(b)

Figure 1.1: (a) First picture; (b) Second picture [1]

- Tables: All tables should be numbered with Arabic numerals (1.1, 2.1,..., n.1) based on experiment numbers. Captions should be placed above tables, center justified. Leave one line space between the heading and the table. Only horizontal lines should be used within a table, to distinguish the column headings from the body of the table, and immediately above and below the table.

Table 1.1: Variation of drag force with the velocity of an object [2]


- Equations: Equations and formulae should be typed in “Equation Editor” and numbered consecutively with Arabic numerals (based on experiment number) in parentheses on the right hand side of the page. Equation must be insert in the left cell while equation number in right cell, as shown in Eq.(1). After writing equation, make table lines hidden.

$E = mc^2$	(1.1)
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After writing equation, hide the border of table.

$$E = mc^2 \tag{1.1}$$

## Grading Policy

SECTION	Grade %
• Formatting	10%
• Abstract	5%
• Introduction and Theoretical background	10%
• Experiment procedure	5%
• Data and result	20%
• Calculations	20%
• Discussion	20%
• Conclusion	10%
• Reference	

**Plagiarism should be less than 45%**

## ➤ **ABSTRACT**

The abstract is not a part of the body of the report itself. Rather, the abstract is a brief summary of the report contents that is often separately circulated so potential reader can decide whether to read the report. The abstract should very concisely summarize the whole report: why it was written, what was discover or developed, and what is claimed to be the significance of the effort. The abstract does not include figures or tables, and only the most significant numerical values or results should be given.

## ➤ **INTRODUCTION THEROTICAL EXPEIMENT:**

The introduction should provide a clear statement of the problem posed by the project, and why the problem is of interest. It should reflect the scenario, if available. If needed, the introduction also needs to present background information so that the reader can understand the significance of the problem. A brief summary of the unique approach your group used to solve the problem should be given, possibly also including a concise introduction to theory or concepts used later to analyze and to discuss the results.

## ➤ **EXPERMINT PROCEDURE:**

The purpose of the materials and method section is to describe the materials, apparatus, and procedures used to carry out the measurements. Most importantly, the section needs to provide a clear presentation of how key measurements were obtained and how the measurements were analyzed. This is where the particular approach followed to reach the project's objectives should be described. The detail should be sufficient so that the reader can easily understand what was done. An accurate, schematic diagram depicting the apparatus should be included and referred to in the text as needed (if a diagram has been already provided it can be used in the report, provided that the source is properly referenced). To improve clarity of presentation, this section may be further divided into subsections (ex. a Materials subsection, an Apparatus subsection, a Methods or Procedures subsection, etc.).

## ➤ **DISCUSSION**

In this section, you should look at your results and graphs and write your comments on what you see. First of all, you should look at each result and judge if it makes sense. For example, a flow rate of 1000 m<sup>3</sup>/s is quite impossible in any lab. Also, you should try to look for patterns in the numbers and graphs. If something is increasing or decreasing or shows some other kind of pattern, mention this. Look at how the numbers are changing across different readings and (if possible) even within the same reading.

When you see a pattern, ask yourself if this makes sense and is according to what you expected based on the theory. If yes, then your experiment satisfies the theoretical expectation. If no, then think of why your numbers are not matching your expectations. It is possible that you made a mistake in following the procedure, or there is a fault with the apparatus. It is also possible that what you expected is wrong and the results show something else to be the truth. Comment on this.

Also, try to bring values from other sources, like books or research papers that you can use to compare your results with. Always mention the reference for these values.

## ➤ **CONCLUSIONS**

The conclusions should summarize the central points made in the Discussion section, reinforcing for the reader the value and implications of the work. If the results were not definitive, specific future work that may be needed can be (briefly) described. The conclusions should never contain "surprises". You should not just say "The experiment was performed and the results were satisfactory". This is not clear at all. You should mention the behavior of the variables you were studying and if the results were as expected or not. If not, briefly mention what you think might have happened. Therefore, any conclusions should be based on observations and data already discussed. It is considered extremely bad form to introduce new data in the conclusions.