

Insert Your Course Name Here
(Course #)
Term Project/Home Work/Short or Full Lab Report



School of Engineering
The University of Jordan, Amman-Jordan

Project/Experiment/Report Title Goes here

by

FirstName Initial LastName (ID #)

FirstName Initial LastName (ID #)

Section #:

Month 9999

Abstract

An abstract consists of answering three basic questions:

1. What was done?
 2. How it is was done? and
 3. What were the basic findings and conclusions?
- ✓ Abstract should be written in passive voice.
 - ✓ Abstract should not exceed 200 words.
 - ✓ It should be written in three separate paragraphs.
 - ✓ This section and all the coming sections should be written in Font 12, Times New Roman with regular style and single line spacing.
 - ✓ This page should contain the abstract ONLY and numbered using the Roman Style (i.e. I, ii, iii ...etc)
 - ✓ It should be written in passive voice.

Nomenclature

The nomenclature defines the parameters, symbols and acronyms used in the report. Standardized symbols should be used whenever possible.

- The units should be added to the nomenclature.
- The parameters should be arranged alphabetically.
- This section should be written in separate page(s).

A	Area	[m ²]
P	Pressure	[N/m ²]
Re	Reynolds Number	[ND]

Subscript

f	Liquid
s	surface

Greek Symbols

μ	Dynamic viscosity	[N-s/m ²]
α	Angle of attack	[deg]

Objective

The objective(s) should be written based on the instructor's explanation of the experiment. DO NOT copy from laboratory manual.

Experimental Setup and Procedure

This section should contain the working principle of the setup used in the experiment. It should contain a clear image of the setup with the main parts identified in suitable manner. The figure's caption (name) should be written below it.

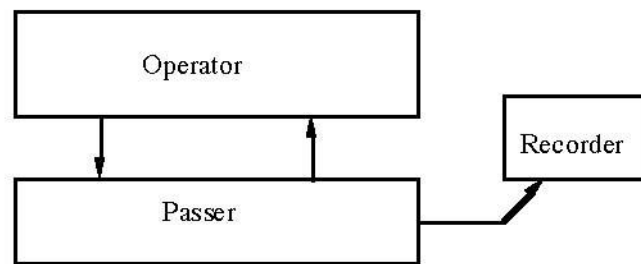


Figure (1): Some numbers from the result of the experiment on nothing

- ✓ Never start any paragraph with figure, table, graph ...etc. You should always write few introductory lines (e.g. This section discusses the setup used in conducting this experiment. The setup is shown below in Figure (1)).
- ✓ Define the major components of the setup.
- ✓ Explain briefly how it works.
- ✓ Finally, explain with your own words (DO NOT COPY FROM USER MANUAL) how you conducted the experiment.
- ✓ As of this page onwards, the page numbering should start using the 1-100 Arabic numbers.

Data Observation

The data observed are divide into two main items.

Given data

- This includes the constants that were not changed in the experiment e.g atmospheric conditions, certain setup dimensions (if not changed) e.g diameter, lengthetc.
- As for the material's properties e.g, density, viscosity, thermal conductivity ...etc these should be mentioned with the reference wherefrom they were copied cited.

Observed data

- ✓ The data that were taken from the setup ONLY should be mentioned in the table.
- ✓ Table columns should be written with units and without abbreviations.
- ✓ The table caption should be mentioned on top of the table.
- ✓ Do not add any calculated data in the table.

Table (1): The observed data

Trial #	Quantity 1 [unit]	Quantity 2 [unit]
1	4.0	4.9×10^{-2}
2	3.2	4.5×10^{-2}
3	2.8	4.4×10^{-2}

If the experiment consists of several parts, put the tables with each case defined before that.
For example :

Case (I) : Partially submerged torous

Inset the data observed table for this case below.

Case (II) : Totally submerged torous

Inset the data observed table for this case below.

Sample calculations

In this section you are required to provide with proper explanation (NOT only use equations and substitute numbers) the steps for your calculations.

You should state which data you are taking for sample calculations.

If the calculations involve theoretical and experimental values for comparison, you should calculate the percentage error in the experimental value.

Uncertainty analysis

This is extremely important part that tells the accuracy of the test procedure (NOT ONLY in the final value).

This can be extremely helpful if one wishes to find the main factor responsible for the error.

There are many methods suggested for this section :

- 1) Uncertainty propagation (you can use suitable software for that as you have been taught)
- 2) Limiting and relative limiting errors using equations.
- 3) Limiting and relative limiting errors using maximum/minimum method.

Finally a summery of the calculations should be added in separate table(s) with errors and uncertainty calculations.

Results and discussion

Present your results in a logical sequence, highlighting what is important and how the data you obtained have been analyzed to provide the results you discuss.

- You should discuss what you infer from the data.
- You need to adopt a critical approach.
- For example, discuss the relative confidence you have in different aspects of the measurements.
- Make sure that all diagrams, graphs etc. are properly labeled and have a caption.

- A neat hand drawn diagram is preferable to a poorly made computer diagram, or a poor resolution image copied from the web.

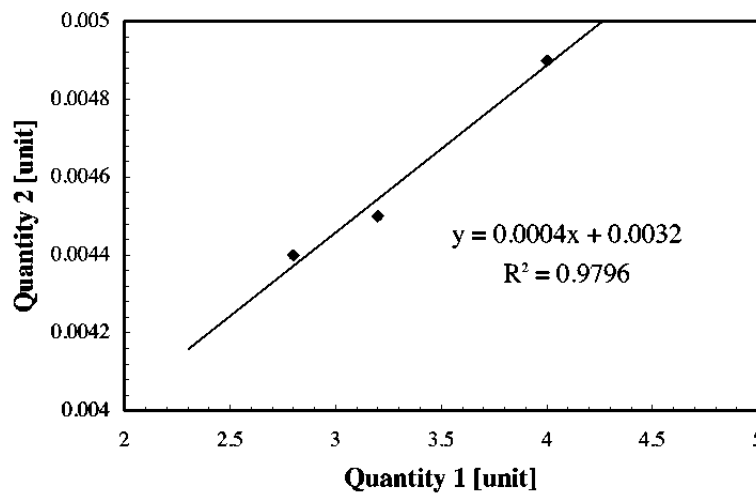


Figure 2 Quantity 1 versus Quantity 2



Figure (2) : Variation of Quantity (2) with Quantity (1)

- Graphs should be clear, informative, with proper legends and unit.
- If curve fitting is implemented, it should contain the fit model and its R2.
- Graph outline should be removed.

Conclusion

This is the section in which you need to put it all together. It differs from the abstract in that :

- 👉 It should be more informative, something that can easily be accomplished because you may devote more words to it. You should include a concise version of your discussion, highlighting what you found out, what problems you had, and what might be done in the future to remedy them.
- 👉 You should also indicate how the investigation could usefully be continued.

References

For this section, you should provide the source of information wherefrom you got the equations, fluid or materials properties.

Use this website : <https://scholar.google.com/>

- ✓ Textbooks, articles, company websites are trusted sources.
- ✓ Do not use the lab manual as a reference.
- ✓ List the references in same order as they appear in the text.
- ✓ For my students, I ask them to use the APA or Chicago style.

Book

Holman, J. P. (2012). Experimental methods for engineers. McGrawHill, New Yourk.

Journal article,

Sang, J., Yuan, Y., Yang, W., Zhu, J., Fu, L., Li, D., & Zhou, L. (2022). Exploring the underlying causes of optimizing thermal conductivity of copper/diamond composites by interface thickness. *Journal of Alloys and Compounds*, 891, 161777.

Web page,

<http://www.gobbeldygook.co.uk>. Viewed on 22/10/2020.

A word of caution on web based information. Journal articles and most books are peer reviewed. This means that other workers in the field have checked them for accuracy etc.. This is not true of web sites. Be careful in taking information from such sources and if at all possible verify the information by checking in books etc. You should also read the web information critically to see that it makes sense to you.

You are an engineer and should take pride in not being duped into making easy mistakes by faulty information.