



Lab Report Writing

This handout is designed to guide students through the structure and conventions* of lab report writing, providing a clear framework for writing comprehensive lab reports.

Overview of a Lab Report

A lab report is a structured document that details the process and outcomes of scientific experiments. Its primary role is to showcase your comprehension of the scientific method through the execution and evaluation of experimental work.

Lab Report Framework

The lab report is lab specific. Different labs might require different frameworks in lab reports. Please carefully read the lab instructions in each lab manual.

1. Title

The title describes the purpose of the practical work in precise, grammatically correct terms.

2. Abstract

The abstract provides a brief overview of the practical work, including key results and conclusions. Abstracts must be clear enough that the reader can understand a summary of the whole report without needing to read the rest of it.

Abstracts will always be written last, even though they are read first in a lab report.

■ Writing Structure

- 1) What did you do?
- 2) What were your results?
- 3) What do these results tell you?

■ Writing Conventions

- ✧ Keep your abstract brief, i.e., about one paragraph (3–5 sentences).
- ✧ Not all lab reports require an abstract, so check your guidelines first.

3. Introduction

The lab report introduction should set the scene for your experiment. Show the objectives of the lab followed by the theoretical background of the experiment

■ Writing Structure

- 1) Begin by providing background information on your experiment topic.
- 2) Describe relevant previous research on your topic.
- 3) Go into detail on the theoretical basis for your study and describe any directly relevant laws or equations that you'll be using.
- 4) State your main research aims and expectations by outlining your hypotheses.

■ Writing Conventions

- ✧ Write the introduction all in your own words (i.e., paraphrase, don't copy from, any instructions you have been given).
- ✧ Properly cite published resources (ask your lab instructor for guidelines on which citation style to use – See section 8 below on references for more details).
- ✧ Avoid using "I" or "we" to remain objective.

- ✧ Use appropriate tense: simple past tense for describing previous research, present tense for facts.

4. Methods/Procedure

The methods section is where you describe what you actually did during the practical work.

■ Writing Structure

- 1) How the apparatus and equipment were set up (e.g., experimental set-up), usually includes a diagram.
- 2) A list of materials used.
- 3) Steps used to collect data.
- 4) Any experimental difficulties encountered and how they were resolved or worked around.

Note: Make sure you record correct names, formulas (note super- or sub-scripts), and amounts (e.g., weight, volume) with correct figures/diagrams and units.

■ Writing Conventions

- ✧ Write it all in your own words (i.e., paraphrase, don't copy from, any instructions you have been given).
- ✧ Include names and brands of necessary analytical instruments.

5. Results

The results section is where you present a summary and interpretation of the data collected during your experiments.

■ Writing Conventions

- ✧ Present the data/results/observations in the format of tables, charts, and/or graphs, if possible.
- ✧ Include title, labeled axes, variables, and legends (if necessary) for each graph.
- ✧ Position label numbers and captions above each table and below each graph.
- ✧ Each table and graph should be properly cited and explained in the main text.
- ✧ Present each piece of data with correct units, and labels.
- ✧ Use past tense for what was done and present tense for what graphs/tables present or for facts.

6. Discussion

The discussion section is where you interpret and evaluate your results.

■ Writing Structure

- 1) Summarize your key results.
- 2) Summarize any unexpected results.
- 3) Explain how your results relate to your aims, hypotheses, or literature as stated at the start of the report.

7. Conclusion

The conclusion section is where you summarize your report.

■ Writing Logic

- 1) Briefly restate the purpose of the experiment (i.e., the question it was seeking to answer).
- 2) Identify the main findings (i.e., the answer to the research question(s)).
- 3) Note the main limitations that are relevant to the interpretation of the results.



- 4) Summarize what the experiment has contributed to the broader understanding of the problem.

■ Writing Conventions

A conclusion is usually one paragraph, or 200–300 words. In this way a conclusion is very similar to an abstract, but with more emphasis on the results and discussion.

8. References

When in-text citations are incorporated into your lab report (typically in the introduction or discussion), you must always have the full references included in a separate reference list. The reference list is a separate section that comes after your conclusion (and before any appendices).

Check your lab manual or unit information to determine which referencing style is preferred. Carefully follow that referencing style for your in-text citations and reference list. You can find examples and information about common referencing styles in the Library Guide, [Citing Sources at DKU](#).

9. Appendices

An appendix (plural = appendices) contains material that is too detailed to include in the main report, such as tables of raw data or detailed calculations.

Each appendix must be:

- given a number (or letter) and a clear title
- referred to by number (or letter) at the relevant point in the text e.g. (See appendix 1).

**Writing conventions refer to the accepted norms and rules that govern how we structure and present written language within a particular genre or context.*

References

1. Lab Manuals from DKU Lab Instructors
2. <https://www.physics.purdue.edu/~sergei/classes/phys342l/examplerreport.pdf>
3. <https://advice.writing.utoronto.ca/types-of-writing/lab-report/>
4. <https://libraryguides.mcgill.ca/labreports>
5. <https://engineering.usu.edu/students/ewc/writing-resources>
6. <https://students.unimelb.edu.au/academic-skills/resources/reading,-writing-and-referencing/reports/Lab-reports>