

GUIDE TO WRITING LABORATORY REPORTS

Objective of a Lab Report

Laboratory work is just as important as classroom learning. It provides the opportunity to carry out the experiments and manipulations that form the basis of scientific theory. Every student must learn how to formulate and present clear and comprehensive scientific or professional reports. While writing rules may vary slightly from one course to another, they generally follow the same fundamental criteria presented in this document.

Writing Guidelines During Lab Sessions

When you write a report during a lab session, make your writing **clear and simple**. Your report should be **neat, organized, and easy to read**. Use **short sentences** so that your ideas are easy to understand.

Avoid things that make the report confusing, like **changing text alignment** or **mixing styles**. Keep the same reading direction on the page (for example, from left to right), unless the page is clearly divided into columns.

Write in **only one language** for the whole report. If the report has **subsections**, answer them **in the same order** and **with the same titles** as in the assignment. This helps the reader find information quickly.

If your report is **three to four pages or longer**, **number your pages** to make it easier to read and organize.

1 Structure

A complete lab report usually includes the following parts:

- Title Page: contains the title of the experiment, the course, student names, group, and date of submission.
- Introduction: presents the theory, objectives, and methodology of the experiment.
- Experimental Procedure and Results: describes the materials used, the steps followed during the experiment, and the results obtained. This section should follow the same order as the experiment was done in the lab. For each step, students should explain what was done, what was measured, and what was observed. All symbols, variables, and units must be clearly defined.
- Conclusion: summarizes the main findings and comments on whether the objectives were achieved.

1.1 Title Page

On the cover page, write clearly:

- Course title
- Student name(s) using English letters (A-Z)
- Group and section
- Report Title
- Submission Date

1.2 Introduction

The **introduction** is a short presentation. It gives the reader all the information needed to understand the experiment and follow the rest of the report.

The introduction should include **three parts**:

- **Theory** – This part explains the background of the topic. It gives a short summary of the theory, literature, or previous knowledge connected to the experiment. Mention what is already known about the subject.
- **Objectives** – the goals or questions the experiment tries to answer. You explain what you want to learn or demonstrate in the experiment. You can also include any hypotheses if relevant.
- **Methodology** – a short description of how these goals will be achieved.

Important: The introduction must be **prepared at home before the lab session**. It helps you understand the experiment in advance and saves time during the session.

1.3 Experimental Procedure and Results

In this section, describe step by step what was done during the experiment and what was observed. Follow the same order as in the laboratory session and as in the questions given in the assignment. This helps the reader easily understand your reasoning and find your answers.

For each step, clearly mention:

- the materials and equipment used,
- the measurements taken (with units),
- the observations or results obtained.

All symbols and variables must be defined in the text.

Use tables and figures to present your results in a clear and organized way. Each figure and table must:

- have a **number** (for example, “Figure 1” or “Table 1”),
- have a **title or caption** that explains what it shows,
- have clearly **labeled axes** with units (for graphs),
- be **referred to in the text** (for example: “as shown in Figure 2”).

After presenting your results, always explain them. Ask yourself: **“What should I observe, and does it match my expectations?”** Use your theoretical knowledge from the course to interpret what you see.

If something does not match the expected result, try to explain why (for example, due to measurement errors or limitations of the setup).

Important: Writing down results without interpretation is not enough. Your report should show that you understood what happened during the experiment.

1.4 Conclusion

Write a short paragraph after the discussion. Summarize the purpose of the experiment and the main results. Keep it short.