

LABORATORY REPORTS GUIDELINES

Title Page: *What is the report about?*

This page should include the department and number of the class, the date, and the names of the students who performed the lab and wrote the report.

Abstract: *What is the essence of the report?*

The abstract is a very concise summary of the experiment and the results obtained. It is usually a single paragraph (just a few sentences) long, though in some cases, it may be somewhat longer.

Introduction: *What is the context in which the experiment takes place?*

The introduction serves to set up the reader for the rest of the report. It includes background information, as well as a description of how this work fits into the broader/wider contexts of the class, field, discipline, etc. It sometimes includes a description of the principles that underlie the experiment, but the details of the work usually fit better into later sections

Theory

This section is used to present and/or derive any equations that will be needed to understand the experiment or perform the data analysis.

Procedure: *What did you do and how did you do it?*

In this section, the details of the way the experiment was performed, how the equipment was configured, the way the data was collected, etc., are described. You will likely refer to the handout quite a bit in this section

Results: *What did you find?*

Include both results, as well as sample calculations when appropriate.

- Make sure results are clearly labeled and set off from the text somehow (eg, in a table or graph), and not simply embedded in the text.
- Think carefully about whether the information is better presented in a table, a graph, or both. (It is not usually necessary to present the same information in both a graph and a table, though it can occasionally be helpful.)
- Show experimental and theoretical results side by side for easy comparison, e.g. in the same table or graph. In tables, include the percentage deviations of the experimental results from the theoretical predictions. This is important!

Discussion: *What does it mean?*

This section is used to demonstrate the significance of the results, and to explain why they are or are not consistent with those that would be expected from theory and analysis.

- Discuss the significance, or meaning, of the results.
- Discuss discrepancies between theoretical and experimental results, and their likely causes.
- Discuss any difficulties encountered in performing the laboratory.

Conclusion: *What have I learned?*

The Conclusion returns to the larger purpose of the lab, which is presented as the learning context in the Introduction. Most of the time the conclusion is a single paragraph that sums up what happened in the experiment, whether your hypothesis was accepted or rejected, and what this means.

References: *What sources were used?*

This is a list of the references that were cited in the lab report, including the lab manual, any handouts accompanying the lab, the textbook, and sources from the scientific literature.