

LAB REPORTS

Developed by the Center for Global Communication and Design
Revised 06/26/2018

Although engineering and science students are frequently required to write laboratory reports, there is little printed information available about how to write such reports. Furthermore, every discipline, every course, and every professor seems to require a different format and style, and different kinds of laboratory experiments are often reported in different ways. Hence, it is impossible for this handout to describe one correct way to compose a lab report.

What this handout does describe is a generally applicable format for the lab report, leaving you to adapt this format to your particular situation. That is, you can vary the format according to what is most appropriate for the lab work you're doing. Always check with your professor or TA about the specific format he or she desires.

Title Page

The title page provides the name of the lab experiment, the names of the lab partners, the date, and any other information your instructor requires.

Abstract

The abstract is the report in miniature. It summarizes the whole report in one, concise paragraph of about 100-200 words. As distinguished from the introduction, the abstract tells the reader what will be done and lays the groundwork. Also, the abstract summarizes the report itself, not the actual experiment. Hence, you cannot write the abstract until after you've completed the report.

Before writing the abstract, it is often helpful to summarize each section of the report (introduction, methods and materials, procedure, results, discussion, and conclusion) in one sentence. Then try to arrange this information into a short paragraph. Remember, the abstract should be a precise and specific summary.

Introduction

Whereas the abstract summarizes the whole report, the introduction presents the subject of the report and acquaints the reader with the experiment. Typically, the introduction states the problem to be solved or the experiment to be performed and explains its purpose and significance. It also provides whatever background theory, previous research, or formulas the reader needs to understand and perform the experiment (or solve the problem). Usually, the instructor does not want you to repeat such information verbatim from the lab manual; you can simply make the appropriate references to the manual.

Methods and Materials (or Equipment)

This section can consist of a list. Be complete, accurate, and precise.

Experimental Procedure

This section is a full descriptive narrative. Be complete, accurate, and precise, listing all steps in the correct order. State what you really did and what actually happened, not what was supposed to happen or what the textbook said.

Results

Again, give your actual results, not what should have happened. Although results are usually presented quantitatively, you should always introduce each block of information verbally and provide clear and accurate verbal labels.

LAB REPORTS

Developed by the Center for Global Communication and Design
Revised 06/26/2018

Discussion

In this section, you must explain, analyze, and interpret your results, being especially careful to explain any errors or problems. This is probably the single most important part of the report, since it is here that you demonstrate that you understand and can interpret what you have done.

Conclusion

Draw conclusions from the results and discussion that answer the question, "So what?" Then go on to explain your conclusions. In this section, you may also criticize the lab experiment and make recommendations for improvement. Such criticisms and recommendations, however, should focus on the lab as a learning experience; mere complaints about faulty equipment or amount of time spent are not appropriate.

Note: The results, discussion, and conclusion sections can be combined in various ways. Use whatever combination is most appropriate for your situation.

References

Some reports require references at the end. Use the correct forms for the particular field you are working in. Always consult your instructor about reference forms, and check a style manual for the field.

Appendices

Appendices may include raw data, calculations, graphs, and other quantitative materials that were part of the experiment, but not reported in any of the above sections. Refer to each appendix at the appropriate point (or points) in your report. For example, at the end of your results section, you might have the note, See Appendix A: Raw Data Chart.