

Laboratory Reports

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The basic rule of thumb for deciding what to put in your laboratory report is this. Given your report and the laboratory handouts, could another student reproduce what you did in the lab? If the answer is yes, you have written a satisfactory report. If no, you have left essential information out of your report.

If your report is really well written, the other student can reproduce your results easily. The more precisely and clearly you describe what you did the better. You should have a fairly clear idea of what constitutes good technical writing. Every textbook and every technical article you read is an example, either good or bad. Try to emulate the good ones.

For example, be sure to label and caption all figures. Students are often very sloppy about labeling graphs. It is important to learn not to be. Every axis of every graph should be labeled. Your objective is to be sure the reader can understand the information in the graph.

The basic structure of your report should conform to the following outline.

1. Introduction
This should be a brief description of the experiment.
2. Background
This should contain any information the reader needs to understand what you have done. Typically, the handout for the experiment contains most of the background material that is needed. If you use an idea from another course to obtain a result, you should explain that idea here.
3. Results
This should contain a precise description of your results as well as any information someone else would need to replicate them. For example, the values of parameters you use to define your controller must be here.
4. Conclusions
This is the place to put suggestions for how to improve any aspect of the experiment. You should also discuss the quality of your results. Some experiments are better than others.
5. References
If you used any books or articles to help you understand and perform the experiment, you should cite them in the text and list them here. Different publishers have different formats for references. You can use any format provided you use it consistently and the reader has enough information about the book so he or she can get it.