

# Lab Report Guidelines and Grading

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## Structure

A lab report generally includes the following sections. Keep in mind that what follows is just a general guideline. Sometimes, sections are combined depending on the nature of the experiment. For instance, the Data and Results sections can be presented as one, or the Results and Conclusion sections are combined into one. Also, sections can be named differently. For example, Experimental Setup can show up as simply Apparatus, or the Conclusion section can be presented as Discussion.

### Title

Include the Lab Experiment name, your name, which class it is, and date and time of the experiment, in that order. Everything goes on a separate line

### Introduction

A brief paragraph that serves as a summary/abstract of what the lab is about.

### Theory

A summary of the theory that is necessary to understand and perform the experiment. Keep it brief – include only the formulae that were used in your calculations. Use appropriate mathematical symbols for your formulae. Write down your formulae on a separate line so that they stand out.

### Experimental Setup

Detailed description of the experiment – what equipment you used and how you set it up. Sometimes a picture or a diagram is better than explaining it in text. Other times, you can simply list the various instruments. Use your judgment and ask yourself: *what is a concise way to describe the experimental setup?*

### Data

Here you include your measurements. Usually data is best organized in tables. Make sure you include the appropriate units.

### Results

Show your results. If you had to do calculations – explain how you did them and how you got your results from your measurements. Are your results accurate? How do you know?

Occasionally the results are obviously inaccurate. If so, address the issue. Why were your results inaccurate? Did you repeat the experiment? Did you try to identify what was wrong, if anything? Was there any problem with the equipment?

Generally, the more problematic your results, the more you need to include in the form of explanations as to what you did during the lab.

### *Conclusion*

End with a short paragraph (2-3 sentences) summarizing your experiment and results.

## **Grading**

There are five components against which the lab reports are graded.

### *Overall Organization (1 pt)*

Did you include all the relevant sections. Did they contain information in clear and complete manner? Are the sections clearly marked and separated?

### *Data (1 pt)*

Did you present your data clearly? Tables must be clearly labeled with titles and must include units. Was it clear what you measured and what you calculated?

### *Results and Analysis (1 pt)*

Are your results accurate? Did you present them clearly – show the formulae that you used, included proper diagrams and titles, axes labels, and units?

You can still get credit for this section even if your results were not accurate. In such a case, however, you must include an explanation of what might have gone wrong. Did you repeat the experiment and check your measurements? Did you troubleshoot the equipment? Was there something that you did wrong? Was there faulty equipment, etc.

### *Content*

Did every section include all the relevant information. For example, did the Theory section include all the formulae that were used in the experiment? Did the Experimental Setup section include all the equipment and details on how to set up the experiment? Did you include explanations how you calculated your results in the Results section? **Don't include unnecessary information!**

**Do not use someone else's words!** If you want to use a picture or diagram from another book – reference your source. Do not copy and paste sentences from other sources. You must paraphrase

Check with the Guidelines above to make sure you know what is expected to be included in each section.

### *Aesthetics*

This is where the overall visual appearance of your lab report is graded. Did you type your report? Were the page margins appropriate? Were your tables aligned, etc.?

Use a spell checker – there is no excuse to have spelling errors in your report. You will not be marked down for grammar.

Write paragraphs – do not simply sketch down what you did, or write the entire report in the form of lists of items. There must be complete sentences connected in paragraphs.