

Introductory Lab Report Organization

I. Title

The title succinctly summarizes the core of the experiment.

Create a title that does **NOT** use or paraphrase any words provided in the write-up, but that succinctly summarizes the core of the experiment and invites the reader to read more. The title should probably be the last thing you will write after the rest of the report is written. Titles may be no longer than 25 words.

II. Introduction

The introduction section is an overview of where you are going with this and why.

- What is the theory or main hypothesis behind the experiment?
- How does that tie in with what you know so far?
- What results do you expect to get if the theory or hypothesis is correct?
- What are you going to do to test the theory or hypothesis?
- Why is this a good way to test the theory or hypothesis?

III. Procedure

The procedure section lists what you did in the lab and why with enough detail for the reader to reproduce your experiment.

- What did you actually do in the lab?
- What did you do to ensure that your measurements were carefully done?
- If you deviated from the lab manual, what was the reason?
- What precautions did you take to ensure that you measured what you thought you did?
- Did anything out of the ordinary or unexpected happen while you were making the measurements?

IV. Results

The results section presents and explains your observations and data in tabular and/or graphical form.

- Show all the numbers you got, and summarize them in Tables and/or graphs. Explain to the reader what each of these tables and/or graphs shows.
- Discuss any significant features or trends in the data.
- If the experiment had a qualitative component, use words to describe what you observed.

V. Analysis

The analysis section shows the reasoning and mathematical work that went into processing and making sense of the results. It includes the derivation of general equations to the specifics of the experiment.

- Process mathematically the results.
- Show sample calculations of all calculated quantities.
- Convince the reader (and yourself) that the numbers you got are meaningful – just because they came out of a calculator or a computer does not necessarily mean that they make sense.
- How confident are you that your numbers are valid?

VI. Discussion – Conclusions

The discussion – conclusions section ties together all previous sections excepting the title, it shows what you have learned from all this and provides suggestions to the reader on where one might wish to go from here.

- What are the main findings of the experiment?
- How do they support or refute the theory or hypothesis?
- Are they what you expected? If "no", why not? If "yes", how confident are you since numbers almost never come out to be exactly what the theory predicts?
- Was this a good way to do this experiment? If you had to do it over again, what would you do differently?

Note

Not all items under each heading will be applicable to all experiments. Use your judgment regarding what to omit, but a show of bad judgment will result in grade reduction.