

## **Report Writing Tips**

Note that all this information is obtainable and verifiable by googling “report writing guidelines”.

### **General**

Reports are always written in a passive third person past tense. You never write “I did this”, instead, it should be “This was done.” This is because by the time you write the report, all the analysis and the experimentation has been completely finalised. Avoid using statements with ‘I’ and ‘we’. Avoid starting a sentence with ‘And’ and ‘Because’. Do not directly copy out the procedure from the laboratory handout. Do not write ‘as per the laboratory handout’. When you write about what you did in the laboratory (i.e. the procedure), use the past tense.

Your report should concisely convey all the information needed. Do not write filler or irrelevant material as it detracts from the professional tone of your report. A short, concise, to the point report that details everything you need and nothing more is a joy to read.

### **Figures and Tables**

Whenever you include figures and tables, you must always introduce and refer to it in the main body of the report. Never put in a figure/table without explaining what it is and its importance to the analysis.

### **Introduction**

This section provides an expanded overview of the context and motivation for the report and the analysis that was done. It needs to be detailed enough to give a reader with no background in this topic enough information to understand the rest of the report. You need to explicitly state the aims of the report, for example, what was the aim of the experiment? If someone doesn’t understand what this report is going to be about and the type of analysis to expect, your introduction has not been sufficiently thorough.

### **Aims**

The aims of the report is often separated from the introduction and explicitly stated in its own section. It is at your discretion. However, when documenting lab experiments, standalone sections for aims are more common.

### **Theory**

This is a crucial section that allows the reader to comprehend the underlying theories and mathematical framework that form the analysis. Whilst it is annoying to rework theory in an assignment to avoid plagiarism, it is no different from reworking any information in any report you may do in the future – both at university and in industry. Without a theory section, it is impossible to replicate a report’s findings; entirely defeating the point of the scientific method. Without being able to prove your findings are true, they are worthless.

### **Apparatus**

This is another important section. Without it, it is not possible to replicate someone’s work for validation. Care should be taken provide enough details; place yourself in the reader’s shoes to make sure you would be able to reproduce the experiment. It is fine to copy the diagram, however, if it is not properly referenced this is considered plagiarism.

## **Procedure**

This is another section that is critical to a report yet annoying to reword for an assessment item. However, if you copy something that is not yours word for word this is plagiarism. Whilst there will certainly be similarities, under no circumstances should the procedure be directly copied into the report.

## **Calculations**

This can be one of the most confusing sections to write at a university level. Please do not provide all calculations that you do in the report. It is extremely inefficient and a waste of both your time and that of the reader. Instead, please provide the equation that will be utilised and an example calculation.

## **Results**

This section is where you put your results that you want to bring to the reader's attention. Care should be taken to use professional presentation. Think about if it is better to summarise data in figures or tables. Figures should be professionally formatted and care should be given to the presentation. For example, a small graph is a useless graph; ensure that the information is concise and easily read. Provide an explanation of what the results are and why they are being included. Without this context, it is not possible to know for sure why they are important to the analysis.

## **Discussion**

This is the most important part of the report yet it is often the most poorly done at the university level. Here is where the reader looks to you for your expertise and insight. Your results should be intelligently discussed. Don't state the obvious, help us understand the nuances. "The results don't match the theoretical values" is a useless statement on its own. We need more to understand the implications of the findings, for example, "The results don't match the theoretical results which is attributed to ...". Usually a discussion would look to identify and explain sources of error or erroneous assumptions as reasons for deviations from theory. You should provide a quantitative measure of the accuracy of your findings with a percentage error analysis. Aim to be objective in the discussion of your results.

In an error analysis, it is not enough to simply list errors. You must identify significant sources of error and explain how they would have contributed to the error. Again, the reader relies on your expertise to understand the results and only you can assist them as you are the one that did the experiment.

## **Conclusions**

Here you provide a concise recap of what your report has done. You need to confirm the topic that was done and assure the motivation behind the analysis was achieved. You should provide a reminder of what was done and most importantly, summarise the main/important findings. Lastly, you can finish with recommendation to improve the experiment/analysis/process in the future.