

A very brief guide to writing engineering reports

Engineering reports often differ from experimental reports because little data was gathered and few experiments performed. Rather, you often designed a device to address a design goal. Your report describes your prototype and how well it met your goal.

Abstract or Executive Summary

The abstract is a summary of the entire engineering report. It appears first in your paper, and is the only part that is single-spaced. The summary should be brief, often no more than one-quarter or one-half a page. The abstract should:

- Gives the research problem and/or main objective of the research
- Indicates the methodology used (what you did or what you measured)
- Presents the main findings and conclusions

Introduction

The introduction explains the research problem and its context. You should explain why your project is both new and relevant: why your project is better than any existing device to solve the problem.

Your introduction should show clear evidence of outside research, especially if you omit the optional literature review. Always make sure you cite your sources.

At the very least, the introduction should:

- Explain the importance of the problem (Why does it matter? Why is more information needed?)
- Explain the reason and goals for study
- Explain the limitations of the research performed (What your device cannot or will not do)

Literature Review

The literature review is optional. Many young students incorporate the information from their background research in their introduction.

The literature review summarizes and evaluates the literature that you have used in your study . for each source you used, explain:

- How that literature has contributed to your area of research
- The strengths and weaknesses of previous studies
- How that literature informs your own research and understanding of the research problem

Methodology or Design

This portion of the report describes either what you built or what you measured for your project. If you measured anything, here you explain how data was gathered or generated and how it was analyzed.

If this is a design project, you describe the creation of your prototype, and include and blueprints and circuit diagrams needed to understand your project.

Results

Here you will visually and textually represents research findings. To visually represent your results, you can use graphs, tables, diagrams, or charts. The text should point out the most significant portions of research findings, indicate key trends or relationships, and highlight expected and/or unexpected findings.

Discussion

Here you evaluate and comment on your research results. It could include:

- Explanation for your results
- Comments on unexpected results, offering hypothesis for them
- Comparison to literature and other similar devices
- Does your research confirm previous studies? Deviate from them?
- Explanation for how info can be applied in broader context

Conclusion or Summary

In the summary or conclusion, you briefly address these points:

- What was learned through research
- What remains to be learned
- Weaknesses and shortcomings of study
- Strengths of study
- Possible applications of study (how it can be used)
- Recommendations

Citations

Cite sources whenever you are quoting, paraphrasing, or summarizing work that is not your own.

Summarized from:

