

Design Report Requirements

FOR COMPUTER ENGINEERING & ELECTRICAL ENGINEERING DEGREES

Updated: January 30, 2024

Introduction:

A requirement for completing your Computer Engineering or Electrical Engineering Degree is that you take a design course from the list of approved design courses and submit a report detailing your design (for team-based projects, one report per team is required). This report should document your design in a similar manner to the final design reports written for the Freshman DTC course. The minimal requirements for this report are described in the following sections; the instructors of the design courses may specify additional requirements.

Structure and Content of Final Report

The report should have the following elements:

1. Title page
2. Front matter
3. Executive Summary
4. Body
5. References
6. Appendices

Title page

The title page should include your name, the date, the course used for the design option, and the name of the instructor for the design course.

Front matter

Front matter in your report should include a Table of Contents, List of Figures and List of Tables. These should be formatted similar to the guidelines given in DTC.

Executive Summary/Abstract

This is a high-level summary of your design report it should include a brief statement of the design problem, a brief statement of your design approach and a summary of the benefits of your design as well as any important limitations.

Body

The body of your report presents the design problem you worked on and your solution to this problem. Each of the following sections are required in your report:

1. **Introduction:** In the introduction, state the goal of your design project and give a brief overview of your approach. *Compare your design approach to any prior art and provide adequate references.*
2. **Design constraints and requirements:** Comment on *the key requirements and constraints* you had to deal with in your design (e.g. power, costs, and component availability).
3. **Engineering Standards:** Discuss any [engineering standards](#) that you implemented or that are relevant to your design with appropriate references. These may include physical design, programming language standards, digital design, communication protocols, peripherals and digital interfaces, artificial intelligence, security, testing and verification, and safety standards.
4. **Broader considerations:** In this section, you should discuss the broader impacts of your design project. For example, what is the commercial feasibility? If your design became widely used, what impact could it have on society or the broader technical community? Comment on any ethical or legal issues surrounding your design, if appropriate, and what safeguards are in place or may be utilized to mitigate bias, hacking, manipulation, data theft, or infringing on data privacy.
5. **Design description:** This section is where you describe your design in detail. Begin with an overview of your design and follow this with sections describing particular sub-systems and features. You should include adequate details so that someone could reproduce your design if needed (some details may be put into the appendices).
6. **Performance/testing:** In this section discuss how you tested your design and assessed its performance. Point out any weaknesses or limitations to your design.
7. **Conclusions:** Summarize your design and how well it met the requirements. Suggest potential future improvements.

References

Your report should include a complete list of references for all books, articles, websites, and other sources you used in performing your design and preparing the report.

Appendices

Use appendices for including extra details that some readers may want to examine in detail, but would distract from the flow of the report if included in the body. In particular, schematic drawings, commented code listings, mechanical drawings and a bill of materials should be included, as appropriate to the specific design. You also encouraged to include pictures or embed videos that document your working design if appropriate. Some of this material may instead be put in the body of the report if appropriate.