User Manual Instructions

This document is a template of a user manual report. The client may wish to make improvements on the prototype or need to fix it if something goes wrong or another group of students may work to make a more rugged prototype. The report needs to be clear for someone else to use, maintain or reproduce the project. Include as many images and diagrams for a better understanding.

In general, if you are not sure exactly what to include, imagine that this document was the ***only*** thing that you had. Imagine also that your job was to add a new feature to the project that is described in your document. What would *you* need to know?

In the case of very large design files, you may need to store them in MakerRepo. For such files, then you still need to provide a description of what is contained in those files in your document and enough information so that the files can be used effectively.

GNG1103/2101

Design Project User Manual

[TITLE]

Submitted by:

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Abstract

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List of Figures

Insert your list of figures here.

List of Tables

Insert your tables here

List of Acronyms

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| **Acronym** | **Definition** |
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# Introduction

Explain the basic context for your work and any assumptions that you have made for your work. Give an overview of the structure of your document (i.e. explain how it is organized). A block diagram is a useful thing to include here too.

## SUB-TITLE

### SUB-SUB-TITLE

#### SUB-SUB-SUB-TITLE

[prototype picture]

Explain the problem and why it is important (‘WHAT?’)

Explain the fundamental needs of the user (‘WHO?’)

Explain what differentiates your product from others (‘WHY YOU?’)

Explain the main function of the product.

# How the Prototype is Made

Explain in detail how the prototype was built including design considerations and calculations. Separate it into categories (mechanical, electrical, software, etc) and explain the importance of each. If there are options for material that you considered or analyzed, explain which ones might be feasible and which ones that your analysis shows are not feasible (with some results to back up your statements, as required).

For example, if stainless steel was an arbitrary choice for a particular part, you could indicate that other materials (e.g. plastic or wood) might also be an option, but were not tested. However, if metal that resists corrosion is the basic requirement and you tested several materials before choosing stainless steel (i.e. the choice is not arbitrary) then you can indicate this here, along with supporting data. Sometimes, material needs to be swapped, if no longer obtainable or if no longer cost-effective, present any work that you did that might help another designer make material substitutions or even note the basic requirements (e.g. must resist corrosion in a humid room environment for 30 years).

The same is true for time-critical portions of software or expensive/sensitive electronic functionality. Basically, if you were worried about a portion of the design and “settled” on a particular solution or method, then it needs to be documented. This includes the testing or analysis that you did to arrive at that specific solution.

## Mechanical

### BOM (Bill of Materials)

List all the parts and materials in this category (if available, include links to each item).

### Equipment list

List all the equipment that was needed to build this part.

### Instructions

Explain step by step instructions on how to build this specific part. Include as many pictures and diagrams for clear understanding of the process. Make sure to attach all files you are referencing.

# How to Use the Prototype

Explain in detail the functions of the prototype and how it works.

Explain how the user safely operates the prototype.

Explain how the user installs the prototype to use (if applicable).

# How to Maintain the Prototype

Explain the tests that were done on the prototype for validation of the final design. Present all of the applicable results that you obtained (i.e. data collected; performance graphs, etc.). List any issues or special requirements for sustained usage.

Describe regular maintenance that should be performed on the prototype to avoid failure.

Explain what parts may be prone to break and need to be replaced.

# Conclusions et Recommendations for Future Work

Summarise your lessons learned and your work and suggest most productive avenues for future work.

# Bibliography

APPENDICES

APPENDIX I: Design Files

Include all design files with explanations so that the clients or other students from following semesters can continue your project. Also provide the MakerRepo link to your project.

APPENDIX II: Other Appendices

You can include other critical and important work here. Maybe they are not important in the structure of this document but need to be included.