

##### Title Senior Design Project

By

Students’ Name

Students’ Name

Students’ Name

Students’ Name

***(Hard Cover: in BLACK colour with golden letters and borders)***

Supervised by

Name of the Guide

Month, Year

##### Title Senior Design Project

Student name 1

Student name 2

Month, Year

###### **Title Senior Design Project**

By

Name student1 (Reg No.)

Name student 2 (Reg No.)

Name student 3 (Reg No.)

Name student 4 (Reg No.)

Senior Design Project submitted to the Department of Electrical Engineering, College of Engineering, King Khalid University in partial fulfilment of the requirements for the graduation degree of Bachelor of Science in Electrical Engineering

Project Supervisor (s)

Name

Name

Project Assessment Board

Name Examiner 1

Name Examiner 2

Name Examiner 3



COLLEGE OF ENGINEERING, KING KHALID UNIVERSITY, KINGDOM OF SAUDI ARABIA

**Disclaimer**

This document describes work undertaken as part of a programme of study at College of Engineering, King Khalid University. All views and opinions expressed therein remain the sole responsibility of the author, and do not necessarily represent those of the institute.

Abstract

Acknowledgements

Table of contents

List of figures

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# Introduction

It includes a clear explanation of goals of the project, the significance of studying the problem. It should orient the reader to the topic of the report by including the following:

* The problem - Explain the particular problem that is addressed in the report.
* The objective - State the assignment (what our project needs to accomplish to solve the problem).
* The method of the report - Describe the organization and structure of the report.

## Title Paragraph

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Text.

# Literature Review

Discuss the context and history of this general topic and describe what has been done in the past. Include literature search results for the OVERALL problem and context rather than the options for component parts here. Include pros and cons of the existing solutions. Also motivate need for a new solution. Answer the question: What are the most important issues for this topic in terms of the goals of the project and the effects on society? Title Paragraph

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# Methodology

It contains alternative approaches to reach the goal, analysis of the problem and design of subsystems, test and evaluation of the designed components, and synthesis of the components to build the project. Present work plan for project phases (analysis, design, implementation and evaluation) and cost analysis in terms of expected effort and material.

## Design Requirement - these headings can be modified as per the needs of the project

* Specifications and requirements for the project: Specify technical and non-technical characteristics. Give the detailed specifications that served as the basis for the project (interpretation of rules of a contest, interpretation of customer requirements, and interpretation of desired features; how they determine or constrain size, velocity, response time, cost, weight, etc.) Consider aspects such as potential users, cost, safety, user-friendliness, performance, compatibility with other things, functionality, acceptance, convenience, capacity, misuses, legal issues, standards or codes, availability, materials, productivity enhancement, entertainment, technology, and design methods.
* Selection of design criterion: Based on our specification, specify goals for performance, reliability, cost, code size, manufacturability, safety, societal factors (human interface, environmental factors, etc) and any other criteria relevant to the project.
* Alternative solutions: Explore alternative solutions. Evaluate alternative solutions based on situation description and design constraints.
* Select the proposed solution with justifications. Provide an overall architecture of the solution.
* Functional decomposition of the project: Explain the major functions required by our design. Figures and tables should be used to supplement discussion.

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## Feasibility Discussion

* Results of literature search: Provide the options and justification for overall approach (hardware, software, choices of methods).
* Analysis: Describe behavior of the system, data and requirements.
* Options and justification for each functional part: Provide the options and justification of design approach and components or methods used in each functional part. Be sure to cite all of the literature used in our discussion.

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## Final Implementation

* Presentation of final implementation:
  + Describe the project and its functions (include diagrams, code examples, and other figures in the body of the text and refer to any large engineering drawings, listings, etc. in the appendices in the body of the text).
  + We might present the implementation by functional groups. Discuss and present the calculations used in the design of the project in the relevant subsections.
  + Summarize repetitive calculations in tables.
* Also, describe
  + Tools used,
  + The way of implementing the solution and
  + Solution requirements.

# Results and Discussion

This is the fourth chapter of the project that deals with results and discussion. It contains:

* Design of experiments to evaluate the system in laboratory environment and in real life situations,
* Statistical evaluation of the experimental data
* An interpretive discussion of the results and thoughtful evaluation of the design methodology adopted.
* Discussion of the lessons learned.

## Performance Estimates and Results

* Present the estimated performance of the project (and how they were derived) based on the preliminary design (estimates to include speed, cost, power consumption, noise-immunity, ease of use, etc, depending on the project).
* Present the actual performance results. Discuss the results, compare with estimated performance and explain discrepancies. Evaluate performance with respect to legal, illegal, boundary and known cases.
* Compare results with those of other existing solutions.
* Include suggestions for design changes that would improve the performance of the project. Use graphs or other figures to show relationships when appropriate.

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## Phases of implementation

Discuss the phases of the design and implementation of your project. Recommend any improvements that could have been made in the scheduling and planning.

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## Cost Analysis

Tabulate component costs and compare to estimated cost and market cost where appropriate.

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## User’s Manual (if applicable)

Provide a user’s manual for the operation and maintenance of the system designed in the project.

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# Conclusions and Recommendations

It includes:

* A restatement of the problem that gave rise to the report
* Brief statement of the problem, a description of the main features of the method omitting most of the details concerning subjects and measure
* A listing of main findings, and conclusions based on these findings.
* A summary of the design performance
* Recommendations, explaining subsequent action or posing specific questions for investigations. We may indicate as suggestions for further work, implications of what would we do and how we would continue if we had available time and opportunities.

# Reference Materials

Reference materials contain the bibliography (references) and appendices. They are paginated consecutively from the last page of the text. They must meet the same format requirements (margins, fonts, spacing etc) as the rest of the report. Citation in the main text should follow IEEE format with reference number in square brackets appearing consecutively as [1], [2], [3-6] etc.

All the cited references should be listed in the Reference section after the “Conclusions and Recommendations” chapter. REFERENCES SECTION SHOULD NOT BE ASSIGNED A CHAPTER NUMBER. Reference should be listed in IEEE format as follows

The list of references should only include works that are cited in the text and that have been published or accepted for publication. Personal communications and unpublished works should only be mentioned in the text. Do not use footnotes or endnotes as a substitute for a reference list.

If a reference is made to a web-link, the date of access should be included in the reference list for the reference.

References heading must be listed in Table of Contents.

**References**

1. G. Eason, B. Noble, and I. N. Sneddon, “On certain integrals of Lipschitz-Hankel type involving products of Bessel functions,” Phil. Trans. Roy. Soc. London, vol. A247, pp. 529–551, April 1955. (references)
2. J. Clerk Maxwell, A Treatise on Electricity and Magnetism, 3rd ed., vol. 2. Oxford: Clarendon, 1892, pp.68–73.
3. I. S. Jacobs and C. P. Bean, “Fine particles, thin films and exchange anisotropy,” in Magnetism, vol. III, G. T. Rado and H. Suhl, Eds. New York: Academic, 1963, pp. 271–350.
4. K. Elissa, “Title of paper if known,” unpublished.
5. R. Nicole, “Title of paper with only first word capitalized,” J. Name Stand. Abbrev., in press.
6. Y. Yorozu, M. Hirano, K. Oka, and Y. Tagawa, “Electron spectroscopy studies on magneto-optical media and plastic substrate interface,” IEEE Transl. J. Magn. Japan, vol. 2, pp. 740–741, August 1987 [Digests 9th Annual Conf. Magnetics Japan, p. 301, 1982].
7. M. Young, The Technical Writer’s Handbook. Mill Valley, CA: University Science, 1989.

## Organizing Appendices

* Materials that may be of interest or importance to some readers but are not sufficiently relevant to be included in the body of the report go to appendices. There may be many appendices supplementing the report. Some material, such as computer printouts, software CODE, may be so lengthy that placing it in the text would disrupt the reader's attention. Students must discuss with their advisor(s) the need for appendices, carefully considering the value of the material they propose to include.
* Appendices must be designated with a letter (Appendix A, Appendix B, etc) each starting on a fresh page, and a title. Each appendix must be listed in the Table of Contents. All appendices must meet the usual margin requirements.

**A Sample Checklist for Minimum Requirements**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Supervisor Name** | | **Dr.** | | |
| **Project Title** | | **Design and Analysis** | | |
| **Student Names (s)** | | **Name ID** | | |
| **ITEM\*** | | **IMPLEMENTED** | | |
|  | | **Yes** | **No** | **Indicate page(s) in the report for yes, cite reason(s) for no\*\*** |
| **Real life problem** | | I:\Dr-AE-Trainings\Solidworks 3D Modeling and Drafting\tick.jpg |  | Page1 |
| **Advisory committee** | **One from**  **industry** |  |  | **examiners** |
| **From other**  **specializations** |
| **Situation description** | | I:\Dr-AE-Trainings\Solidworks 3D Modeling and Drafting\tick.jpg |  | Page 2 |
| **Problem definition** | |  |  |  |
| **Open-ended** | |  |  |  |
| **Alternative solutions** | |  |  |  |
| **Aesthetics** | |  |  |  |
| **Specifications and regulations** | |  |  |  |
| **Statistics and reliability** | |  |  |  |
| **Teamwork** | |  |  |  |
| **Professional ethics** | |  |  |  |
| **Environmental impact statement** | |  |  |  |
| **Cultural and social assessment** | |  |  |  |
| **Financial analysis and marketing** | |  |  |  |
| **Final product** | |  |  | Page 41 |
| (\*) See Appendix A for definitions | | | | |
| (\*\*) **Student(s):** Indicate page(s) in the report for yes, cite reason(s) for no  Supervisor(s):Verify page(s) in the report for yes and reason(s) for no  Examiner(s):Verify reason(s) for yes or no | | | | |