King Fahd University of Petroleum & Minerals

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**CE-411-Senior Design Project**

**Term: 2--**

**Name of students and KFUPM ID Numbers:**

1. **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
2. **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
3. **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
4. **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Name of Advisor(s): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Title of Project: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

 **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Team Work (role of each student)**

**1.**

**2.**

**3.**

**4.**

**Software Used: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Design Codes:**

**Design Constraints: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Multi-Disciplinary Areas: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

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**FINAL REPORT OUTLINE**

1. Acknowledgements
2. Abstract

Table of Contents Page Number

List of Tables

List of Figures

Chapter 1: Introduction

1.1. Problem Statement

1.2. Goals and Objectives

1.3. Solution

Chapter 2: Literature Review

Chapter 3: Methodology

Chapter4: Analysis

4.1 Manual calculations

4.2 Software Output

4.3 Discussion

Chapter5: Conclusions, and Recommendations

1. References
2. Appendices (if applicable)

**FINAL REPORT CONTENTS**

* 1. Title page that should include Project Title, List of Team Members, Senior Project Advisor(s), Examiners, and Date of Submission.
	2. Executive summary:
* Includes a brief description of the objectives of the project
* Cites the main constraints (design, economics, safety, environment)
* Includes main findings of design results, and other analysis.
	1. Acknowledgement
	2. Table of Contents
	3. List of Figures
	4. List of Tables
	5. Introduction:
* Explain the project and its location.
	1. Project statement
* Clear description of the project objectives.
* Cites overall design constraints, economic constraints, safety, and environmental constraints.
	1. Manual calculations.
* Assumptions and basis, rates, and so on.
* Clearly state the desired unknown variables. Hand calculations are required.
* Computer applications are also required with details described in the appendix.
* Comments and discussion of the overall results.
* Comparison between hand and computer calculations is encouraged.
	1. Detailed Design
* Detailed design of at least 1 unit per student.
* Summary of design results.
* Discussion of design results.

**FINAL REPORT FORMAT**

**Typing Specifications**

* Page Format – Line Spacing: one and half spacing
	+ Font Size: 12 point for the body text, maximum of 14 point (Bold) for section headings
	+ Left/Right Margins: 2.54 cm
	+ Top/Bottom Margins: 2.54 cm
* Page Limit – The page limit for the report is 60 (Others should be in the Appendices).
	+ There is no page limit to Appendices.
	+ Title Page: The Title of the project, followed by names of team members, the Advisors, Coordinators, Department, Fall/Spring AY 211x – 222x, and date of submission.

**Units**

* + Units of all quantities must always be mentioned, e.g., 5 kg, etc
	+ Use the same unit system throughout the report (SI units, with British units in parenthesis)

**Figures, Tables, and References**

* + All figures, tables, and graphics should be inserted close to where they are described and numbered. A list of figures and tables is also required.
	+ Figure captions should be directly below the figures.
	+ Table captions should be above the Tables.
	+ References: A list of references must be provided at the end of the report and arranged in the order of citation in the text. All references should be cited in the text.
	+ The number of the reference citation is to be reported consecutively in square brackets.
	+ The references must be complete and precise, e.g., name of the author (Book, Encyclopedia); title, volume, page number, year month, editor, and electronic address.

**Calculations**

* + All calculations must be hand calculated, detailed, explained, and referred to figures and illustration whenever necessary with proper units.
	+ Software Packages can be used in addition to hand calculations but must not replace hand calculations.
	+ All symbols must be defined in nomenclature at the beginning of the report.
	+ All equations must be numbered and typed using equation editor with 12'' size and Times New Roman Italic type