

COE 485: Senior Design Project (141)

Design Document — Template

1 Introduction

- Introduce the general issue with which the project deals, e.g. rising cost of health care, environment, ... etc.
- Why is it an issue? supporting evidence; government statistics, news, magazine, or journal articles, etc.
- Briefly describe how the project deals with the issue.

2 Problem Statement

- The specific problem the project is supposed to solve.
- Why was the project conducted? why do we need it?
- Project Impact: potential impact of the project on society *locally* and *globally*:
 - Positive impact.
 - Possible negative impact, due to misuse or unaccounted for risks.

3 Project Specifications

- Customer/User requirements, functional and non-functional.
- Technical specifications:
 - Derived from and maps to customer requirements.
 - Must be specific and testable. The product must meet all specifications.
 - Examples: speed, response time, range, accuracy.

4 System Design

Completely document the project design. Use graphical illustrations as much as you can.

4.1 Architecture

- Sub-function identification.
- System architecture and components.
- Hardware vs. software components.
- Functions of each component.

4.2 Component Design and Implementation

- Off-the-shelf hardware and software components.
- Custom hardware and software components, and justification for developing custom components.
- Design and implementation of each component, e.g. flow chart, pseudocode.

4.3 System Integration

- Interfaces between components (hardware and software).
- Component interaction and related interfaces.

4.4 Design Decisions

- Examined design options at both levels: system and components.
- Criteria for choosing the adopted design options.
- Tradeoffs.

5 Progress

5.1 Task Schedule

For each task, whether completed, started, or not started yet, list:

- Owner.
- Description.
- Timespan: when does it start and when is it completed.
- Status: in progress, completed, waiting for another task (specify), delayed (why), ... etc.

5.2 Completed Tasks

For each completed task, describe:

- How it was performed, and what it involved.
- Difficulties faced, and their resolutions.