*Florida International University*

*School of Computing and Information Sciences*

CIS 4911 Senior Capstone Project – **Software Engineering Focus**

**Format of Deliverable 3 - Design Document (DD)**

**The bullets represent the sections before chapter 1 “Introduction”, numbers on the left represent the corresponding chapters and sections.**

* Cover page – Name of course and section, name of system, project team number, group member names, date, and name of professor.
* Copyright and trademark notices, restrictions on copying or distributing the documentation, information for contacting the issuing organization (reader’s comments), warranties, contractual obligations or disclaimers, and general warnings and cautions.
* Abstract – one or two paragraphs giving a brief overview of the document.
* Table of Contents

1. Introduction

Introduce the introduction (one or two paragraphs)

* 1. Problem definition (very similar to RD).
  2. Design methodology used e.g., identify software process model, ease of creating a design from the systems requirements, types of models (UML models) used to represent the design.
  3. Definitions, acronyms, and abbreviations.
  4. Overview of document

1. System Design (i.e., overall system design)

Introduce the system decomposition chapter (one or two paragraphs).

* 1. Overview – high-level description of the system design (architecture) e.g., provides a package diagram showing the major subsystems and briefly describes each subsystem. Relate the system decomposition to the requirements of the system. Use at least two (2) architectural patterns.
  2. Subsystem Decomposition – provide a detailed description for each of the major subsystems. Identify the requirements associated with each subsystem.
  3. Hardware and Software Mapping – map subsystems to h/w and s/w. The h/w and s/w are for the systems to be implemented. May include a deployment diagram showing the associations between the subsystems and hardware.
  4. Persistent Data Management – identify data that needs to be stored and the structure of the data. Use a data dictionary to represent the initial data extracted from the use cases.
  5. Security/Privacy – describe user authentication processes, encryption of data, and use of firewalls or security servers.

1. Detailed Design

Introduce the detailed design chapter (one or two paragraphs)

* 1. Overview – briefly describe the behavior and structure of each subsystem.
  2. Static model – detailed description of the structure for each subsystem. May include detailed class diagrams. Place diagrams (e.g., minimal class diagram, detailed class diagram per subsystem) inline. Use at least four (4) design patterns.
  3. Dynamic model – state machine diagram for the main control object in each subsystem. Include the design of the ***main algorithms*** used in the problem solution. Refinement of the sequence diagram from the analysis model. Place diagrams inline.
  4. Code Specification - describe the class interfaces (attributes and method signatures) and constraint (invariants, pre-condition and post-conditions) for the main control object in each system. Code should be in Appendix C.

1. Glossary - define terms used in document, especially domain specific terms.
2. Appendix
   1. Appendix A - Use case diagram for use cases being implemented.
   2. Appendix B - Use cases being implemented (from the RD).
   3. Appendix C – Documented class interfaces (code) for the subsystem(s) you will implement and the constraints.
   4. Appendix D - Diary of meeting and tasks.
3. References