جامعة الإمام عبدالرحمن بن فيصل
IMAM ABDULRAHMAN BIN FAISAL UNIVERSITY
كلية علوم الحاسب وتقنية المعلومات
College of Computer Science and Information Technology

CSC 305: Software Engineering
Term: 1
Academic Year: 2025/2026
Course Coordinator: Dr. Rahma Ahmed

# Software Design Description (SDD)

**Based on IEEE 1016 – Adapted for Student Projects**

Project Title: [Enter Project Name]

Team Name & Members: [List Members]

Advisor: [Instructor Name]

Version: [e.g., 1.0]

Date: [dd-mm-yyyy]

## Table of Contents



## 1. Introduction

• Define the purpose of this Software Design Description (SDD).
• State the intended audience (developers, testers, instructor).
• Provide references to related documents (SRS, SPMP).

## 2. System Overview

• Provide a high-level description of the system.
• Include design strategy, architectural style (e.g., layered, client-server).
• Provide a context diagram if possible.

## 3. Design Considerations

- State assumptions, constraints, design goals, and trade-offs.
- Example: Technology choices, performance constraints, portability.

## 4. Architectural Design

- Provide an overall system architecture with diagrams.
- Show major components/modules and their interactions.
- Example diagrams: Component diagram, deployment diagram.

[Insert architecture diagram here]

## 5. Detailed Design

- Provide a detailed description of each module/component.
- Include inputs, outputs, algorithms, and interactions.
- Example diagrams: Class diagram, sequence diagram, activity diagram.

| Module Name | Responsibilities | Inputs/Outputs | Notes / Diagrams |
|---|---|---|---|
| **Example: Authentication Module** | Handle user login/logout | Input: Username/Password \| Output: Auth Token | See Sequence Diagram |

## 6. Data Design

- Describe the data structures and databases.
- Provide ER diagrams or schema definitions.
- Example: Tables for Users, Roles, Permissions.

## 7. External Interfaces

- Define how this system interacts with external systems.
- Describe APIs, libraries, hardware devices, and communication protocols.

## 8. Appendices

- Glossary of terms.
- Supporting diagrams (architecture, ERD, UML).
- References to standards, books, or articles.

## Evaluation

*To be completed by the instructor or supervisor.*

### 6. Project SDD Report (36 points / 6 marks) – Week 13

| Section | Excellent (Full Points) | Good (75%) | Fair (50%) | Poor (25% or below) | Points |
|---|---|---|---|---|---|
| **1. Introduction** (3 pts) | Purpose, scope, audience, and references are clearly explained and aligned with SRS. | Covers most parts but some vague. | Minimal explanation of purpose/scope. | Missing or irrelevant. | /3 |
| **2. System Overview** (4 pts) | High-level architecture and design strategy clearly described with diagrams (e.g., context, layered). | Basic overview given, limited diagrams. | Vague overview, no clear design rationale. | Very poor or missing. | /4 |
| **3. Design Considerations** (5 pts) | Assumptions, constraints, goals, and trade-offs are well-identified and justified. | Most elements present, some weak. | Limited mention of goals or constraints; unclear trade-offs. | Missing or irrelevant. | /5 |
| **4. Architectural Design** (8 pts) | Comprehensive architecture description with diagrams (component, deployment). Clear decomposition and interactions. | Most elements present but incomplete. | Limited diagrams; weak explanation of interactions. | Very poor or missing. | /8 |
| **5. Detailed Design** (8 pts) | Each module/component described in detail (data, algorithms, I/O, interactions). UML diagrams included (class, sequence, activity). | Most components covered, some lack detail. | Few components described; diagrams minimal. | Missing or irrelevant. | /8 |

| Section | Excellent (Full Points) | Good (75%) | Fair (50%) | Poor (25% or below) | Points |
|---|---|---|---|---|---|
| **6. Data Design** (3 pts) | Data structures, schema, and relationships clearly defined (ERD/schema included). | Some data design described, missing relationships. | Minimal mention of data structures or schema. | Missing. | /3 |
| **7. External Interfaces** (3 pts) | Interfaces with systems/components clearly specified (APIs, libraries, protocols). | Interfaces covered but vague. | Limited or unclear description. | Missing. | /3 |
| **8. Appendices & Supporting Info** (2 pts) | Glossary, references, and supporting diagrams included. | Some appendices included. | Minimal (e.g., only glossary). | None provided. | /2 |