Software Requirement Engineering

SEMESTER PROJECT

COURSE CODE: SE211

INSTRUCTOR: MUHAMMAD HUZAIFA SHAH

CONTRIBUTION TO FINAL GRADE: **16%**

Project General Instructions:

- Read all the instructions carefully and follow the deadlines strictly.

Innovative Software Requirement Engineering: From Concept to Specification

This project challenges students to **independently choose a software idea**—whether by collaborating with a **private company, public sector organization, standalone system emerging, or entrepreneurial ideas**. The objective is to **analyze, elicit, and document requirements** for a software solution that could function as a complete, self-contained system.

Students must **identify a real-world need** for software, engage with stakeholders, and apply industry-standard **requirement engineering processes and tools** to produce a **comprehensive Software Requirements Specification (SRS)**—laying the groundwork for future development.

Project Timeline & Key Dates

- **Project Assigned: Week 9**
  - Thursday, March 20, 2025
- **Proposal Submission Deadline: Week 10**
  - Friday, April 11, 2025
- **Final Report & Presentation Submission: Week 13**
  - Tuesday, April 29, 2025
- **Final Presentations: Week 13**
  - Starting from Wednesday, April 30, 2025, onwards

PROJECT'S GENERAL INSTRUCTIONS

1. **Group Formation:**

- Students must **form groups of 3-4 members**.
- Each group is **free to choose their own project idea** (real company or conceptual software).
- **Strictly Requirement Engineering ONLY**—no development/coding.

2. **Scope:**

- The project will **follow the standard engineering process**.
- It **must include** stakeholder interviews, surveys, prototyping, and requirement validation.
- The final submission will be a **Software Requirements Specification (SRS) + Presentation**.

3. Mandatory Tools (at least one tool for each module):

- **For Interviews & Brainstorming**: Miro, Notion etc.
- **For Prototyping**: Figma, Balsamiq, Axure RP etc.
- **For Requirement Management**: JIRA, IBM Rational DOORS, ReqView etc.

4. Plagiarism Policy:

- Turnitin Report of the project report (**both Similarity Index and AI must be <19%**).
- Any group found guilty of using already used modules/any deliverable shall straight forwardly be given **ZERO**.

5. Evaluation Criteria (16%):

Component	Marks	Due Date
Phase 1: Project Proposal	**3%**	**April 11, 2025**
Proposal Document (2-3 pages)	**2%**	
Proposal Presentation (7-8 slides)	**1%**	
Phase 2: Final Submission	**13%**	**April 29, 2025**
Final Report (SRS Document)	**9%**	
Final Presentation	**4%**	**April 30, 2025 (onwards)**

6. Submission Method:

- One group member must submit a hard copy to the instructor.
- The same member must upload the soft copy on MS Teams at specified submission.

7. Late Submission Policy:

- Failing to meet any deadline shall penalize the entire group.
- Absolute **50%** of the respective module shall be deducted on late submissions of any module.

Phase 1: Project Proposal (3%)

1. Proposal Document (2%)

- **Format: 2-3 pages max (Concise & well-structured).**
- **Submission Type:** Google Docs / MS Word and PDF.
- **Contents:**
  - **Title:** Name of the selected idea/product/company.
  - **Objective:** What problem does the software aim to solve?
  - **Scope:** Define what the project will and will not cover.
  - **Stakeholders:** Identify key people/users involved.
  - **Expected Deliverables:** What will be submitted at the end?
  - **Timeline:** Rough project schedule breakdown.
  - **Tools & Technologies:** Mention which tools (Miro, Notion, Figma, JIRA, etc.) will be used.

2. Proposal Presentation (1%)

- **Presentation Format: 7-8 slides (Clear, well-structured, and visually appealing).**
- **Submission Type:** PowerPoint Presentation.
- **Key Slide Content:**
  1. **Introduction:** Project Name, Team Members.
  2. **Problem Statement:** Why this project?
  3. **Solution Overview**: What the software will do.
  4. **Scope & Boundaries:** Features to be covered.
  5. **Stakeholders**: Who are the key users?
  6. **Proposed Timeline:** Breakdown of project tasks.
  7. **Expected Deliverables:** Final submission expectations.
  8. **Tools & Technologies:** Mention tools for elicitation, documentation, and prototyping.

Phase 2: Final Report & Presentation (13%)

Each group must submit a complete Software Requirements Specification (SRS) 15–20-page document. This document must strictly follow the Requirements Engineering Process and NOT include development.

1. Introduction (1%)

- **Project Overview:** Briefly describe the software/system.
- **Purpose:** Why is this software needed?
- **Scope:** Features included/excluded.
- **Assumptions & Constraints:** Any limitations to be considered.

2. Requirement Elicitation (2%)

- **Techniques Used:**
  - Interviews, Surveys, Prototyping, Brainstorming, Focus Groups.
- **Stakeholder Details:**
  - Who was consulted?
- **Data Collection:**
  - Summarize interview/survey responses.
- **Tools Used:**
  - Miro, Notion, Google Forms, etc.

3. Functional & Non-Functional Requirements (2%)

- **Functional Requirements:**
  - List of system features.
  - Use cases and user stories.
- **Non-Functional Requirements:**
  - Performance, security, usability, scalability, etc.

4. Requirement Modeling (2%)

- Use Case Diagrams (at least 3).
- Interaction Diagrams (Optional but encouraged).
- Wireframes/Prototypes (Figma, Balsamiq, Axure RP).

5. Requirement Validation & Management (2%)

- **Traceability Matrix:** Linking requirements to stakeholder needs.
- **Interaction Matrices:** Identifying relationships and dependencies between requirements
- **Change Management (Managing Scope Creep):** How will the requirement changes be handled?

6. Final Presentation (4%)

- **Each team will present their project during Week 13 (April 30 onwards).**
- **Presentation Duration: 8-10 minutes, followed by a Q&A session.**
- **Key Components:**
  1. Introduction (Project Overview & Problem Statement).
  2. Contribution (of each group member).
  3. Requirement Elicitation Process (Stakeholders consulted & Techniques used).
  4. Key Functional & Non-Functional Requirements.
  5. Wireframes/Prototypes (UI Designs using Figma/Balsamiq).
  6. Requirement Validation & Management (Traceability & Change Handling).
  7. Final Thoughts & Challenges Faced.

Keep in mind:

1. DO NOT include software development—focus only on Requirement Engineering.
2. Use real-world requirement elicitation techniques—avoid making assumptions.
3. Each team member should contribute equally—marks may be adjusted for non-contributing members.
4. Plagiarism will not be tolerated—all submissions will be checked for originality.

Good Luck!
Instructor,
M. Huzaifa Shah