**Software Requirements Engineering**

**General Information**

Course Code: SE 2001

Course Title: Software Requirement Engineering

Total Credits: 3

Prerequisite of: Software Design and Architecture

Instructor: Engr. Sara Rehmat

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**Grade Distribution:**

Assignments (around 3): 5%

Class participation: 3%

Presentations and Reports (around 3): 7%

Quizzes (weekly): 10%

Sessional-1: 15%

Sessional-2: 15%

Finals: 45%

**Text Book:**

Software Requirements, Third Edition by Karl Weigers and Joy Beatty

**Reference Books:**

Requirements Engineering - A Good Practice by Sommerville, Ian Sawyer, Pete - Guide (1997)

Requirements Engineering by Dick, Jeremy\_ Hull, Elizabeth\_ Jackson (2017)

**Course Policies:**

**Attendance Policy:**

Minimum 80% attendance is required for appearing in final exams. Anyone joining class later than 20 minutes will be marked absent.

**Plagiarism Policy:**

Zero tolerance policy will be adopted towards plagiarism of any sort. Plagiarism includes copying the contents from the internet or from the class fellows as they are. The students copying and the students from whom the assignments are copied, will be awarded zero.

**Course Learning Outcomes:**

1. Describe the activities involved in the requirements engineering process.
2. Apply different requirements elicitation, analysis, prioritization, and validation techniques
3. Author requirements in natural language using different templates
4. Distinguish between different types of requirements
5. Use a Requirements Management tool to store requirements and manage changes to them

**Course Outline:**

| **Week** | **Lecture** | **Topic** |
| --- | --- | --- |
| 1 | 1 | Introduction to the course, Requirements Engineering Definition and Activities |
|  | 2 | **Part1: Introduction to Software Requirements**  Software Requirements Definition, Levels/Types of Requirements |
| 2 | 3 | Role of Customer, Business Analyst in Requirement Engineering |
|  | 4 | Good Practices in Software Requirement Engineering |
| 3 | 5 | **Part2: Requirements Development**  Establishing business requirements |
|  | 6 | Identifying users |
| 4 | 7 | **Presentation and Report Submission (Vision and Scope Document)** |
|  | 8 | Requirement Elicitation |
| 5 | 9 | Understanding Requirements |
|  | 10 | Modeling Requirements (Data Flow Diagrams, Swimlane Diagrams, State-transition Diagrams) |
| 6 | **Sessional-1** |  |
|  | 11 | Discussion |
| 7 | 12 | **Presentation and Report Submission (Requirements Models)** |
|  | 13 | Documenting Requirements, SRS templates, Guidelines for writing requirements |
| 8 | 14 | Software Quality Requirements |
|  | 15 | Software Constraints |
| 9 | 16 | Requirements gathering through Prototyping, Types of Prototypes, Mock ups, Proofs of Concept |
|  | 17 | **Presentation and Report Submission (SRS)** |
| 10 | 18 | Prioritizing Requirements, Rationale and Techniques of Prioritizing Requirements |
|  | 19 | Requirement Validation and Verification, Reviews, Testing, |
| 11 | **Sessional-2** |  |
|  | 20 | Test Cases for Requirements |
| 12 | 21 | Requirements Reuse, Common Reuse Scenarios, Requirements Pattern, |
|  | 22 | Tools for Requirements Engineering |
| 13 | 23 | Specific Requirement Management tool Introduction |
|  | 24 | Specific Requirement Management Tool Tutorial |
| 14 | 25 | **Part4: Requirements Management**  Requirements Management Practices, |
|  | 26 | Managing Changing Requirements, Change Control, Process Description, |
| 15 | 27 | Change Control Process Description |
|  | 28 | Requirements Traceability |
| 16 | 29 | Final Presentation on Requirements Management Tool |
|  | 30 | Final Presentation on Requirements Management Tool |