Zarqa University
Faculty of Information Technology
Department: Software Engineering
Course title: Software Engineering
System Requirements (1503271)

Instructor:
Lecture's time:
Semester:
Office Hours:

Course description:

The Software Requirements Engineering course looks at activities aimed at establishing a common understanding of the problem domain, what the clients and users expects the newly developed system to do, types of user requirements, completeness and consistency properties to be addressed by a Software Project. It includes methods techniques and tools associated with the elicitation, analysis and modeling, specification, review and management of software requirements. Students are given hand-on–practice using selected case studies and a team or individual project to collect, prototype, model, specify and verify requirements of a mid- sized Software Project.

Aims of the course:

1) Describe the role of requirements engineering within the software life cycle.
2) Apply key elements and common methods for elicitation and analysis to produce a set of software requirements for any sized software system.
3) Describe, Compare, contrast and evaluate structured, Object Oriented, data Oriented and formal approaches to requirements modeling.
4) Model Prototype and specify requirements.
5) Do some risk assessment and develop an informal requirements specification given a set of requirements.
6) Conduct a review of software requirements document using best practices to determine the quality of the document.
7) Demonstrate the capacity to use a range of software tools in support of the requirements engineering process.

Intended Learning Outcomes: (ILOs)

Successful completion of this course should lead to the following learning outcomes:

A- Knowledge and Understanding:

A1) List the basic Req. Eng. Standards and structures.
A2) List the concept of requirement, Req. Process, and main req. models.
A3) List advanced concepts of Req. modeling, risk analysis, documentation, prototyping, req. change management etc.

B- Intellectual Skills:

B1) Distinguish req. Eng process.
B2) Analyze and compare different req. models.

C) Subject Specific Skills:

C1) Implement solutions of a range of software tools in support of the requirements engineering process.
C2) Implement solutions using software requirements document.

D) Transferable Skills:

D1) Discuss and work in a group in order to design and implement solutions of several req. resources Management issues.
D2) Discuss and work in a group in order to study and present a req. use cases.

Course structures:

Week	Credit Hours	ILOs	Topics	Teaching Procedure	Assessment methods

1,2	3	A1	Introduction to Requirements Engineering.	Presentation methods and techniques, Sources of information and Instructional Aids	Diagnostic tests to identify the students level and areas of weakness Formal (stage) evaluation a) Class Participation b) Ist Exam c) 2nd Exam d) Activity file
3,4	3	A1	Preparing for Requirements Elicitation	Presentation methods and techniques, Sources of information and Instructional Aids	Diagnostic tests to identify the students level and areas of weakness Formal (stage) evaluation a) Class Participation b) Ist Exam c) 2nd Exam d) Activity file
5,6,7,8	4	A1, A2,A3 D1,D2	Requirements Elicitation.	Presentation methods and techniques, Sources of information and Instructional Aids	Diagnostic tests to identify the students level and areas of weakness Formal (stage) evaluation a) Class Participation b) Ist Exam c) 2nd Exam d) Activity file
9,10	4	C1,C2	Writing requirements Documents.	Presentation methods and techniques, Sources of information and Instructional Aids	Diagnostic tests to identify the students level and areas of weakness Formal (stage) evaluation a) Class Participation b) Ist Exam c) 2nd Exam d) Activity file
11,12	3	C1, C2	Requirements Risk Management.	Presentation methods and techniques, Sources of information and Instructional Aids	Diagnostic tests to identify the students level and areas of weakness Formal (stage) evaluation a) Class Participation b) Ist Exam c) 2nd Exam d) Activity file
13,14	3	C1, C2	Formal Methods and Requirements Management.	Presentation methods and techniques, Sources of information and Instructional Aids	Diagnostic tests to identify the students level and areas of weakness Formal (stage) evaluation a) Class Participation b) Ist Exam c) 2nd Exam d) Activity file

References:

Text Book: Phillip A. Laplante , “requirements engineering for software and systems”, 2d edition, 2014.

Optional:

- Hull E., Jackson K., and Dick Jeremy , “requirements engineering”, 3d edition, Springer, 2011.
- Karl Wiegers and Joy Deatty, “Software Requirements”, 3d edition, 20014.
- Brian, Daniel, Juergen, and Arnold, “Software & System Requirements Engineering in Practice”, McGraw Hill, 2009.

Assessment Methods:

Methods	Grade	Date
First Exam	20%	
Second Exam	20%	
Assignments (Reports /Quizzes/ Seminar / Tutorials ….)	10%	
Final Examination	50%	