

" حيث تصبح الرؤية واقعاً "
"When Vision Becomes
Reality"

" عراقة وجودة "
Tradition and Quality

Detailed Course Description - Course Plan Development and Updating Procedures/ Department of Software Engineering	QF01/0408-3.0E
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Faculty	Science and IT	Department	Software Engineering
Course number	0114252	Course title	Software Specifications and design
Number of credit hours	3	Pre-requisite/co-requisite	0114251

Brief course description

This course will provide invaluable information on how to write and structure requirements, whilst explaining the importance of Systems Engineering and the creation of effective solutions to problems.

Course goals and learning outcomes	
Goal 1	Get the Basic knowledge of Software Requirements.
Learning outcomes	1.1 Ability to define basic concepts and principles within requirements engineering. 1.2 Give an account of several different types of requirements and know the differences between them.
Goal 2	Identify the Software Requirements for any systems
Learning outcomes	2.1 Ability to describe and value several different methods and techniques for requirements engineering. 2.2 Ability to describe and relate different sub-processes within requirements engineering.
Goal 3	Apply analysis techniques such as needs analysis, goal analysis, and use case analysis
Learning outcomes	3.1 Ability to describe the relation between the requirements engineering process and other processes in the product lifecycle. 3.2 Ability to describe the relation between requirements engineering and market driven product management.
Goal 4	Validate requirements according to criteria such as feasibility, clarity, freedom from ambiguity, etc.
Learning outcomes	4.1 Ability to validate and measure the quality of requirements. 4.2 to discuss some scientific results within requirements engineering research.
Textbook	1.- Requirements Engineering Fundamentals: A Study Guide for the Certified Professional for Requirements Engineering...30 Apr 2015, by Klaus Pohl and Chris Rupp.
Supplementary references	1.- Requirements Engineering, by Jeremy Dick, Elizabeth Hull, Ken Jackson. 2017. Springer. 2.- Requirements Engineering: From System Goals to UML Models to Software Specifications, Axel van Lamsweerde, Wiley; 1 edition 2010. 3.- Visual Models for Software Requirements (Developer Best Practices), Anthony Chen, Joy Beatty. Microsoft Press; 1 edition (July 25, 2012).

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Course timeline				
Week	Number of hours	Course topics	Pages (textbook)	Notes
01	1 1 1	Basics of requirements engineering <ul style="list-style-type: none"> definition of requirements engineering importance of requirements engineering place of requirements engineering in development process types of requirements: functional requirements, non-functional requirements, quality attributes main requirements engineering activities, documents and processes 	Chapter 1	
02	1 1 1	Basics of requirements engineering (Continue)	Chapter 2	
03	1 1 1	Requirements inception and elicitation <ul style="list-style-type: none"> product vision and project scope traditional elicitation approaches (interviews, stakeholders study, workshops, ...) scenario/use case approaches prototyping requirements negotiation and risk management 	Chapter 3+4	
04	1 1 1	1. Requirements inception and elicitation (Continue)	Chapter 4+5	
05	1 1 1	Requirements analysis and specification - modeling techniques <ul style="list-style-type: none"> inception vs. specification techniques for writing high-quality requirements documentation standards (e.g., IEEE) 	Chapter 5	

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		830-1998) <ul style="list-style-type: none"> ○ goal-oriented modeling ○ Structured analysis and other techniques ○ UML v2 and URN notations ○ external qualities management, contract specification 		
06	1 1 1	Requirements analysis and specification - modeling techniques (Continue)	Chapter 6+7	
07	1 1 1	Requirements verification, and validation <ul style="list-style-type: none"> ○ detection of conflicts and inconsistencies, completeness ○ techniques for inspection, verification and validation ○ feature interaction analysis and resolution 	Chapter 7	
08	1 1 1	Requirements verification, and validation (Continue)	Chapter 8	
09	1 1 1	Requirements verification, and validation (Continue)	Chapter 9	
10	1 1 1	Requirements management <ul style="list-style-type: none"> ○ traceability, priorities, changes, baselines ○ tool support (e.g., DOORS) 	Chapter 10	
11	1 1 1	Requirements management (Continue)	Chapter 11	
12	1 1 1	Requirements management (Continue)	Chapter 12	
13	1 1 1	Examples of requirements approaches in typical development processes	Chapter 14	
14	1	Examples of requirements approaches in typical	Chapter	

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	1 1	development processes	15	
15	1 1 1	Examples of requirements approaches in typical development processes	Chapter 16	
16	1 1 1	Final Exam		

Theoretical course evaluation methods and weight	Participation = 10% First exam 20% Second exam 20% Final exam 50%	Practical (clinical) course evaluation methods	Semester students' work = 50% (Reports, research, quizzes, etc.) Final exam = 50%
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Approved by head of department		Date of approval	
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Extra information (to be updated every semester by corresponding faculty member)

Name of teacher	Dr. Mohammad Abdallah	Office Number	9115
Phone number (extension)	329	Email	m.abdallah@zuj.edu.jo
Office hours			