

جامعة الزيتونية الأردنية Al-Zaytoonah University of Jordan كلية العلوم وتكنولوجيا المعلومات Faculty of Science and IT



"Tradition and Quality"

Course Plan for Master program - Study Plan Development and Updating Procedures/

QF01/0408-4.0E Course Plan for Master program - Study Plan Dev

Study plan No.	2021/2022		University Specia	lization	Software En	gineering
Course No.	0104715		Course name		Advanced Software quality	
Credit Hours	3		Prerequisite Co-req	_l uisite		
Course type	☐ MANDATORY UNIVERSITY REQUIREMENT	UNIVERSITY ELECTIVE REQUIREMENTS	☐ FACULTY MANDATORY REQUIREMENT	Support course family requirements	☐ Mandatory requiremen ts	✓ Elective requirements
Teaching style	☐ Full online	e learning	☐ Blended lear	ning	✓ Traditio	onal learning
Teaching model	□ 2Synchronous	s: 1asynchronous	☐ 2 face to face :	1synchronous	✓ 3 Tı	raditional

Faculty member and study divisions' information (to be filled in each semester by the subject instructor)

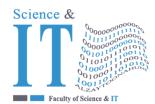
Name	Academic rank	Office No.	Phone No.	E-r	nail
Dr.Feras Ahmed Altarawneh	Assistant professor	117	325	f.altarawneh	n@zuj.edu.jo
Division number	Time	Place	Number of students	Teaching style	Approved model

Brief description

This course defines the quality of the software, the foundations of quality measurement system, quality management, assurance of quality, planning, quality of product and process quality, software product metrics, management of the quality factors of the software and its effectiveness, global scale ISO 9001, check the software and plans and techniquesfor quality.

Learning resources

Course book information (Title, author, date of issue, publisher etc)	"Software Quality Assurance", Claudy Y. Laporte and Alian, 2018, 1th Ed., Wiley-IEEE Computer Society.
Supportive learning resources (Books, databases, periodicals, software, applications, others)	1- Software Engineering: A Practitioner's Approach, 8th edition, by R. Pressman, McGraw-Hill. 2015. ISBN-978-0-07-802212-8.
	2- Galin D. (2009) "Software Quality Assurance - From Theory to Implementation", Addison Wessley, Harlow, England.
	3- Chemturi, Murali (2010). "Mastering Software Quality Assurance: Best Practices and Techniques for Software Developers", the Publisher: the Author.
	4- Godbole, Nina S. (2014). "Software Quality Assurance: Principles and Practice", 2 nd edition, Alpha Science International, Pangbourne, UK.ttttttrol, 87tdx



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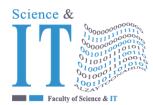
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Department

	5- Goodman P. (2004) "Software Metrics: Best Practices for Successful IT Management", Rothstein Asso., Brookfied, CONN, USA			
Supporting websites				
The physical environment for	✓ Class	□ labs	☐ Virtual	☐ Others
teaching	room		educational	
			platform	
Necessary equipment and				
software				
Supporting people with				
special needs				
For technical support		_		

Course learning outcomes (S = Skills, C= Competences K= Knowledge,)

No.	Course learning outcomes	The associated program learning output code
	Knowledge	
K1	The knowledge of the fundamental concepts of software quality,	MK1
	quality requirements, and quality culture.	
K2	awareness of the software quality models and standards	MK2
К3	Understanding of the software quality assurance and how to integrate it into software development process.	Mk1
K4	Understanding techniques of review, audits, verification & validation, the software quality metrics and management components of the software quality.	Mk1
	Skills	
S1	An ability to explain of the concepts, requirements, challenges, the culture and cost of the software quality.	MS1
S2	An ability to distinguish and use different software quality models, standards, and several quality factors.	MS1
S3	An ability to use the software quality assurance activities in software development process.	MS3
S4	An ability to compare, analysis and evaluate varieties tools of the software quality assurance and different quality management standards.	MS1
S5	An ability to apply the audits methods, V & V techniques, and use different metrics for measuring the software quality.	MS3
	Competences	
C1	An ability to develop different quality software in diverse application domains.	MC1
C2	An ability to work with diverse team and communicate effectively	MC1
C3	An ability to learn from, and get expertise from different domains.	MC3

Mechanisms for direct evaluation of learning outcomes



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Type of assessment / learning style	Fully electronic learning	Blended learning	Traditional Learning (Theory Learning)	Traditional Learning (Practical Learning)
First exam	0	0	%20	0
Second / midterm exam	%30	%30	%20	30%
Participation / practical applications	0	0	10	30%
Asynchronous interactive activities	%30	%30	0	0
final exam	%40	%40	%50	40%

Note: Asynchronous interactive activities are activities, tasks, projects, assignments, research, studies, projects, work within student groups ... etc, which the student carries out on his own, through the virtual platform without a direct encounter with the subject teacher.

	Schedule of simultaneous / face-to-face encounters and their topics				
Week	Subject	learning style*	Reference **		
2	 Software Quality Fundamental What Is Quality? Software Quality Error. Fault, and Failure Software Quality Assurance Quality Culture 	Lecture Lecture	2 - 27 39 - 56		
4	 Cost of Quality Quality Culture Five dimensions of software project The software engineering code of ethics 	Lecture	39 - 30		
3	 Software Quality Requirements Software quality models Definitions of software quality requirements Requirement traceability during the software life cycle Software quality requirements and quality plan 	Lecture	69 - 95		
4	Software Engineering Standards and Models	Lecture	108 - 129		
5	- Standards, cost of quality, and business models	Lecture	835-836		

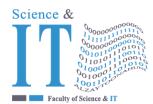


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6	Soft	ware Quality Assurance	Lecture	449-459	
		Background Issues	-		
		Elements of Software Quality			
		Assurance			
		SQA Processes and Product			
		Characteristics			
		SQA Tasks, Goals, and Metrics			
7		are Quality Assurance Plan	Lecture	518 - 537	
,		SQA Planning	Lecture	310 - 337	
8	Reviev	Executing SQAP	Lecture	172-195	
o			Lecture	172-193	
		Personal review and desk-check			
		review			
		Standards and models			
		Walkthrough			
		Inspection review			
		Project lunch reviews and project			
		assessments			
	1	Agile meeting			
9		Measures	Lecture		
		Selecting the type of reviews			
	•	Reviews and business models		199-205	
	•	Software QUALITY Assurance			
		Plan			
10		re Audits	Lecture		
		es of audits			
		its and software problem			
		ution		215 - 239	
		its process and ISO 9001standard			
		it according to CMMI			
		and SQAP			
11		cation and validation	Lecture	255 - 291	
	•	Benefits and costs of V&V			
	•	V&V standards and process			
		models			
	•	V&V according to			
		ISO/IEC/IEEE12207			
	•	V&V according to CMMI model			
	•	V&V in SQA plan			
12	A Fran	nework for	Lecture	654 - 657	
	Produc	et Metrics			
	•	Measures, Metrics, and			
		Indicators			
	•	The Challenge of Product			
		Metrics			
	•	Measurement Principles			
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QF01/0408-4.0E Course Plan for M		Course Plan for Master progran	n - Study Plan Development a Department	and Updating Procedures/
	• 7	Goal-Oriented Software Measurement The Attributes of Effective Software Metrics		
13	- Function - Metric - Composition - Operation	cs for the Requirements Model tion-Based Metrics ics for Specification Quality ponent-Level Design Metrics ation-Oriented Metrics terface Design Metrics	Lecture	663 - 672
14	- Metri	ics for Source Code ics for Testing Metrics for Maintenance	Lecture	675-679
15	- An S - Elem Mana - Basel - Softv	ware Configuration Items ment of Dependencies and	Lecture	624-628
16	Final E			

^{*} Learning styles: Lecture, flipped learning, learning through projects, learning through problem solving, participatory learning ... etc.

Schedule of asynchronous interactive activities (in the case of e-learning and blended learning)

Week	Task / activity	Reference	Expected results
1	Ţ.		_
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^{**} Reference: Pages in a book, database, recorded lecture, content on the e-learning platform, video, website ... etc.