

QF01/0408-4.0E	Course Plan for Master program - Study Plan Development and Updating Procedures/ Department
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Study plan No.	2021/2022	University Specialization	Software Engineering
Course No.	0104755	Course name	Advanced System Analysis and Design
Credit Hours	3	Prerequisite Co-requisite	-----
Course type	<input type="checkbox"/> MANDATORY UNIVERSITY REQUIREMENT <input type="checkbox"/> UNIVERSITY ELECTIVE REQUIREMENTS	<input type="checkbox"/> FACULTY MANDATORY REQUIREMENT <input type="checkbox"/> Support course family requirements	<input checked="" type="checkbox"/> Mandatory requirements <input type="checkbox"/> Elective requirements
Teaching style	<input type="checkbox"/> Full online learning	<input type="checkbox"/> Blended learning	<input checked="" type="checkbox"/> Traditional learning
Teaching model	<input type="checkbox"/> 2Synchronous: 1asynchronous	<input type="checkbox"/> 2 face to face : 1synchronous	<input checked="" type="checkbox"/> 3 Traditional

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

Name	Academic rank	Office No.	Phone No.	E-mail	
Mohammad Muhairat	Associate Professor	-----	-----	drmohairat@zuj.edu.jo	
Division number	Time	Place	Number of students	Teaching style	Division number
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Brief description

Systems Analysis and Design helps students develop the core skills required to plan, design, analyze, and implement software applications. Students are guided through the topics in the same order as professional software developer working on a typical real-world project.

Learning resources

Course book information (Title, author, date of issue, publisher ... etc)	Systems Analysis and Design: An Object-Oriented Approach with UML, 6th Edition, Alan Dennis, Barbara Wixom, David Tegarden, 2020, Wiley.			
Supportive learning resources (Books, databases, periodicals, software, applications, others)	1. Object-Oriented Analysis, Design and Implementation: An Integrated Approach, Brahma Dathan and Sarnath Ramnath Nov 3, 2015. 2. Object Oriented Analysis & Design Cookbook: Introduction to Practical System Modeling, Edwin Mach Dec 6, 2019.			
Supporting websites				
The physical environment for teaching	<input checked="" type="checkbox"/> Class room	<input checked="" type="checkbox"/> labs	<input type="checkbox"/> Virtual educational platform	<input type="checkbox"/> Others
Necessary equipment and software	CASE TOOLS			
Supporting people with special needs	-----			
For technical support	-----			

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

No.	Course learning outcomes	The associated program learning output code
Knowledge		
K1	The knowledge of software engineering principles, including a thorough understanding of software analysis and design, evaluation and testing and software quality and correctness.	MK1
K2	Understanding of software engineering processes, including management of complex software development projects.	MK2
Skills		
S1	An ability to analyze, design, verify, validate, implement, apply, maintain, and manage the development of software systems to meet desired needs within realistic constraints.	MS1
S2	An ability to identify, formulates, and solve software engineering problems.	MS2
S3	An ability to use the techniques, skills, and modern tools necessary for software engineering practice.	MS3
Competences		
C1	An ability to function on multidisciplinary teams to communicate effectively.	MC1
C2	Ability to develop software systems in one or more significant application domains.	MC2

Mechanisms for direct evaluation of learning outcomes

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 **
1	Introduction to Systems Analysis and Design	Lecture, learning through projects, learning through problem solving	1-40
2	Project Management	Lecture, learning through projects, learning through problem solving	41-90
3	Requirements Determination	Lecture, learning through projects, learning through problem solving	95-124

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4	Business Process and Functional Modeling	Lecture, learning through projects, learning through problem solving	126-167
5	Structural Modeling	Lecture, learning through projects, learning through problem solving	169-209
6	Behavioral Modeling	Lecture, learning through projects, learning through problem solving	211-253
7	Moving on to Design	Lecture, learning through projects, learning through problem solving	255-285
8	Class and Method Design	Lecture, learning through projects, learning through problem solving	287-319
9	Data Management Layer Design	Lecture, learning through projects, learning through problem solving	320-362
10	Human-Computer Interaction Layer Design	Lecture, learning through projects, learning through problem solving	364-410
11	Physical Architecture Layer Design	Lecture, learning through projects, learning through problem solving	414-449
12	Construction	Lecture, learning through projects, learning through problem solving	452-478
13	Installation and Operations	Lecture, learning through projects, learning through problem solving	479-503
14	Case Study (Project 1)	Lecture, learning through projects, learning through problem solving	----
15	Case Study (Project 2)	Lecture, learning through projects, learning through problem solving	----
16	Final Exam	-----	----

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

** Reference: Pages in a book, database, recorded lecture, content on the e-learning platform, video, website ... etc.

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

Week	Task / activity	Reference	Expected results
1			
2			
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