QF01/0408-4.0E	Course Plan for Master program - Study Plan Development and Updating Procedures/ Department

Study plan No.	**2021/2022**		**University Specialization**	**Software Engineering**	
Course No.	**0104711**		**Course name**	**Advance software requirement**	
Credit Hours	**3**		**Prerequisite Co-requisite**		
Course type	☐ MANDATORY UNIVERSITY REQUIREMENT	☐ UNIVERSITY ELECTIVE REQUIREMENTS	☐ FACULTY MANDATORY REQUIREMENT	☐ Support course family requirements	✓ Mandatory requirements / ☐ Elective requirements
Teaching style	☐ **Full online learning**		☐ **Blended learning**		✓ **Traditional learning**
Teaching model	**2Synchronous: 1asynchronous**		**2 face to face : 1synchronous**		☐ ✓ **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	
Division number	**Time**	**Place**	**Number of students**	**Teaching style**	**Approved model**

Brief description

One of the main challenges in software development is to make sure one is developing the right system, i.e. to understand the requirements that need to be fulfilled. The focus of this course is how to find and collect requirements from relevant sources both at the start and during a software development project.

Learning resources

Course book information (Title, author, date of issue, publisher ... etc)	• Mark Richards, 2015, Software Architecture Patterns, O'Reilly Media, Inc. • Requirements Engineering Fundamentals: A Study Guide for the Certified Professional for Requirements Engineering…30 Apr 2015, by Klaus Pohl and Chris Rupp. • Requirements Engineering, by Jeremy Dick, Elizabeth Hull, Ken Jackson. 2017. Springer. Requirements Engineering: From System Goals to UML Models to Software Specifications, Axel van Lamsweerde, Wiley; 1 edition 2010. • Visual Models for Software Requirements (Developer Best Practices), Anthony Chen, Joy Beatty. Microsoft Press; 1 edition (July 25, 2012).			
Supportive learning resources (Books, databases, periodicals, software, applications, others)				
Supporting websites	https://www.iso.org/standard/35733.html			
The physical environment for teaching	✓ Class room	☐ labs	☐ Virtual educational platform	☐ Others

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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	Ability to define basic concepts and principles within requirements engineering.	**Mk3, Mk4**
K2	Give an account of several different types of requirements and know the differences between them	**Mk2, Mk3**
K3	Ability to define basic concepts and principles within requirements engineering.	**Mk1,Mk5,**
K4	Understanding the different types of requirements and know the differences between them	**Mk2, Mk4, Mk5**
	Skills	
S1	Elicit and analyze requirements from stakeholders;	**Ms1 ,Ms4**
S2	Specify requirements effectively in a requirements document;	**Ms2,Ms3, Ms4**
S3	Assure the quality of requirements through verification and validation processes	**Ms2**
	Competences	
C1	Maintain and manage requirements, including dealing with requirements change and traceability;	**Mc2**
C2	Adapt the requirements development process to the software/system development methodology(e.g., waterfall, iterative, agile);	**Mc1**
C3	Maintain and manage requirements, including dealing with requirements change and traceability;	**Mc1, Mc2**
C4	Adapt the requirements development process to the software/system development methodology(e.g., waterfall, iterative, agile);	**Mc2,Mc3**

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)
Midterm exam		**40%**		
Participation / practical applications	0	**10%**		
final exam		**%50**	**30%**	**20%**

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	Fundamentals of Requirement Engineering	Lecture	Text book , chapter 1
2	Types of Requirements Requirements Elicitation Methods	Lecture	Text book , chapter 1
3	Use Cases and Documenting Requirements	lecture	Text book , chapter 2,3
4	Prototyping, Elicitation, and Refinement. Requirements Modeling	lecture	Text book , chapter 4,5
5	Requirements Analysis: Prioritization and Conflict Negotiation	Lecture	Text book , chapter 4,5
6	Requirements Management & Measurement. Requirements Verification & Validation	Lecture	Text book , chapter 6
7	Requirements in Agile Methods	Lecture	Text book , chapter 7
8	Advanced requirements development and analysis	Lecture	Text book , chapter 7
9	**Midterm Exam**		
10	The relationship between requirements, architecture, code, and testing	Lecture	Text book , chapter 8
11	Optional approaches to requirements engineering	Lecture	Text book , chapter 9
12	Final project part1	learning through projects	
13	Final project part 2	learning through projects	
14	Final project part 3	learning through projects	
15	Final project presentation	learning through projects	
16	**Final Exam**		

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

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**** 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