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

Study plan No.	**2021-2022**		**Optional Specialization Requests**		Artificial Intelligence		
Course No.	0142411		**Course name**		Internet of things applications		
Credit Hours	**3**		**Prerequisite Co-requisite**		0142340		
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

This course describes many issues regarding the Internet of things. It includes an introduction to IoT, Solution Patterns for the Internet of Things, the edge of the IoT, the cloud, IoT applications.

Learning resources

Course book information (Title, author, date of issue, publisher ... etc)	1- J. Biron & J. Follett Foundational Elements of an IoT Solution- The Edge, The Cloud, and Application Development. 2016 O'Reilly Media, Inc, 1st edition.			
Supportive learning resources (Books, databases, periodicals, software, applications, others)	2- J. Follett, Designing for Emerging Technologies, UX for Genomics, Robotics and the Internet of Things. O'Reilly			
Supporting websites				
The physical environment for teaching	✓Class room	☐ labs	☐ Virtual educational platform	☐ Others
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	Describe an introduction to the Internet of Things.	**MK2**
K2	Describe Solution Patterns for the Internet of Things.	**MK2**
K3	Describe the edge of the IoT	**MK2**
K4	Describe the cloud	**MK2**
K5	Describe various applications on the Internet of Things.	**MK2**
	Skills	
S1	Apply artificial intelligence techniques in the Internet of Things domain	**MS4**
S2	Effectively design and develop the IoT applications	**MS4**
S3	Analyze and apply knowledge representation	**MS4**
S4	Analyze problem specifications and derive appropriate solution techniques for them	**MS4**
S5	Evaluate advantages and disadvantages of an IoT system, and compare and contrast between them.	**MS4**
	Competences	
C1	Produce various products which are required by the market and solve practical problems.	**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)
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 the Internet of Things	Lecture	**1-4 (Ref 1)**
2	Solution Patterns for the Internet of Things	Lecture, learning through projects, learning through problem solving	**5-10 (Ref 1)**
3	Solution Patterns for the Internet of Things	Lecture, learning through projects, learning through problem solving	**11-20 (Ref 1)**
4	The edge of Internet of Things + Review	Lecture, learning through projects, learning through problem solving	**21-35 (Ref 1)**
5	First exam		
6	The edge of Internet of Things	Lecture, learning through projects, learning through problem solving	**35-38 (Ref 1)**
7	The Cloud	Lecture	**39-45 (Ref 1)**
8	The Cloud	Lecture, learning through projects, learning through problem solving	**45-50 (Ref 1)**
9	Designing for emerging technologies	Lecture, learning through projects, learning through problem solving	**1-15 (Ref 2)**
10	Second exam		
11	Designing for emerging technologies	Lecture, learning through projects, learning through problem solving	**16-26 (Ref 2)**
12	Intelligent material: Designing material behavior.	Lecture, learning through projects, learning through problem solving	**27- 44 (Ref 2)**
13	Fashion with function: Designing for Wearable	Lecture, learning through projects, learning through problem solving	**65-115 (Ref 2)**
14	Internet of Things application	Lecture, learning through projects, learning through problem solving	**51-55 (Ref 1)**
15	Internet of Things application	Lecture, learning through projects, learning through problem solving	**56-60 (Ref 1)**
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.**