

Course Plan for Bachelor program - Study Plan Development and Updating Procedures/ Artificial Intelligence Department	QF01/0408-4.0E
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Study plan No.		Optional Specialization Requests	Artificial Intelligence
Course No.	0142411	Course name	Internet of things applications
Credit Hours	3	Prerequisite Co-requisite	0142340
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	Full online learning	<input type="checkbox"/> Blended learning	<input checked="" type="checkbox"/> Traditional learning
Teaching model	<input type="checkbox"/> 2Synchronous: 1asynchronous	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	
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	<input checked="" type="checkbox"/> Class room	<input type="checkbox"/> labs	<input type="checkbox"/> Virtual educational platform	<input type="checkbox"/> Others
Necessary equipment and software				
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	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%

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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.