Syllabus // emlyon business school

Programme : Bachelor of Business Administration St Etienne

INTERNET OF THINGS FOR ENTREPRENEURS

Course code **B4IOT**

Academic Year **2018-2019**

1. COURSE SPECIFICATIONS

TEACHING LANGUAGE	English
ECTS CREDITS	2.5
PROFESSOR'S CONTACT	by appointment
INSTRUCTIONAL DESIGNER	Clément LEVALLOIS (levallois@em-lyon.com)
ADMINISTRATIVE ASSISTANT	
LEVEL	Beginner
CAMPUSES	› Saint Etienne
PRE-REQUISITES	None
RULES	Attendance in class in mandatory. Plagiarism, defined as the use of external sources without explicitly referencing them using quotes and naming the source, can lead to failing the class.

2. COURSE DESCRIPTION

This is a course based on video lectures teaching how to make a connected object and why the Internet of things is such a big deal today for entrepreneurs, industries and consumers.

“Internet of Things” (IoT) and connected objects are the tiny pieces of electronics used by consumers and industries to collect data in their environment to provide services: from connected bracelets measuring speed and pulse for runners, to all kind of sensors (GPS, humidity, shock, temperature…) to monitor and optimize supply chains.

The objective of this course is to provide you with the key stakes of IoT in the coming years, so that you can innovate and participate in projects in this domain. To do so, you will create your own object at the Maker’s lab of the school. Then, a series of experts will provide video lectures on how IoT fits in a business strategy.

3. PROGRAMME LEARNING GOALS AND OBJECTIVES

3.1 Programme learning goals

- **1** Our graduates are aware/sensitive to a disrupted world
- **2** Our graduates master business basics and disruptive business competencies
- **3** Our graduates develop a creative mindset and are able to make ideas happen
- **4** Our graduates reflect on themselves and project themselves in the future
- **5** Our graduates are able to identify issues in their own area of expertise

3.2 Learning objectives of the programme to which the course contributes the most

- **1** Graduates are able to use the tools and the professional digital systems to create economic value
- **2** Graduate are able to learn from experience, start over and reassess themselves to develop an ability to anticipate and look into the future

4. LEARNING HOURS ANALYSIS

TYPE OF LEARNING HOURS	DISTRIBUTION (HOURS)
Face To Face	4:30
Online	20:00
Individual without mentoring	10:00
Group without mentoring	10:00
Evaluation	10:00
Total	54:00

5. LEARNING OBJECTIVES / OUTCOMES OF THE COURSE

5.1 Academic outcomes

5.1.1 Concepts and theories to which participants are exposed during the course

- 1 Internet of Things and connected objects
- 2 4th industrial revolution
- 3 The Makers movement and rapid prototyping
- 4 Data centric business models

5.1.2 Knowledge acquired during the course

- After this course, participants know or master know the physical process of building a connected object
- After this course, participants know or master know the complementary roles played by software and hardware
- After this course, participants know or master know the relevance of Internet of things for manufacturing, logistics and consumer goods
- After this course, participants know or master know some of the security issues posed by connected objects
- After this course, participants know or master know about rapid prototyping

5.1.3 Competencies acquired during the course

- After this course, participants are able to create a connected object
- After this course, participants are able to add a sketch (code) to a connected object
- After this course, participants are able to discuss the business relevance of connected objects
- After this course, participants are able to understand the business relevance of the Makers movement
- After this course, participants are able to analyze a connected objects's underlying business model

5.2 Professional outcomes

5.2.1 Productions/Deliverables participants will be able to present after taking this course

- 1 A functional connected object made of an Arduino board and an OLED screen
- 2 A video demonstrating their object
- 3 A video discussing an existing connected object on the market

5.2.2 The people that participants will have met or contacted during the course

- Gael Barnabe, instructor of the course. Designer | Web - Graphique - Numérique. Contact: gael-barnabe@live.fr
- Clement Levallois, associate professor emlyon and designer of the course.
- Hortense Pellet, emlyon bba student (contributor to the videos)
- Julien Calviac, IoT cross-Industry senior director at 3DS (contributor to the videos)
- Romain Willmann, emlyon teacher and consultant at IBM in cybersecurity (contributor to the videos)

6. ASSESSMENT OF LEARNING OBJECTIVES

Assignment 1: group work.

Teams are made of exactly 2 students. A video showing the connected object built by the team with comments. See graphic below for details of the grading scheme or visit the online version.

The video should be 5 minutes MAX. Upload this video to Youtube in public or unlisted mode. No file on Google drive, no private video, etc. Then submit the link to this Youtube video via the Dropbox on Brightspace. ASSIGNMENTS NOT FOLLOWING THIS PROCEDURE WILL NOT BE GRADED (GRADE = 0)

Assignment 2 (individual assignment)

A video showing a connected object on the market, with comments. The 3 dimensions to be discussed are:

- technical dimension: how does the object work? (sensors, actuators, connectivity)

- business dimension: what is the business model for this object?

- security dimension: what are the security risks this object can be exposed to?

The video should be 5 minutes MAX. Upload this video to Youtube, Dailymotion, Vimeo or an equivalent service. Then submit the link to this video via the Dropbox on Brightspace. ASSIGNMENTS NOT FOLLOWING THIS PROCEDURE WILL NOT BE GRADED (GRADE = 0)

ASSESSMENT METHOD	FINAL WEIGHT (%)	ASSESSMENT DESCRIPTION	CORRESPONDING LEARNING OUTCOMES OF THE COURSE
Video on Youtube	50	**The video should be 5 minutes MAX. Upload this video to Youtube in public or unlisted mode. No file on Google drive, no private video, etc. Then submit the link to this Youtube video via the Dropbox on Brightspace. ASSIGNMENTS NOT FOLLOWING THIS PROCEDURE WILL NOT BE GRADED (GRADE = 0)**	Knowing what is a connected object and learning how to build one.
Video on Youtube	50	**The video should be 5 minutes MAX. Upload this video to Youtube, Dailymotion, Vimeo or an equivalent service. Then submit the link to this video via the Dropbox on Brightspace. ASSIGNMENTS NOT FOLLOWING THIS PROCEDURE WILL NOT BE GRADED (GRADE = 0)**	tech, biz and security aspects of IoT

7. SEQUENCES DESCRIPTION, LEARNING ACTIVITIES AND ASSIGNMENTS

3 essential dates:

- first in class session. I distribute the parts to build the object.

- second in class session on “how to create value with data”

- last in class session and deadline for the 2 assignments.

The lecturing content course is essentially provided online:

- videos

- text documents (pdf, web pages or both)

- essential readings.

All this material can be found here: https://emlyon.github.io/IoT4Entrepreneurs/

The 3 in class sessions of this course will be devoted to:

1st session: kick off. I distribute the parts of the connected object, repeat instructions for the course and make sure you understood them well. You meet the Makers Lab manager and check when you can visit the lab to use soldering stations under his supervision.

2nd session: tracking progress, answering questions, getting back to some key points of the online lectures, focus on “how to create value from data”

3rd session: closing of the course. I will give directions for further studies and ask for feedback on the course.

8. PEDAGOGICAL RESOURCES AND ACTIVITIES

PEDAGOGICAL RESOURCE/ACTIVITY	RESOURCE LINK
Whole course	https://emlyon.github.io/IoT4Entrepreneurs/

9. OTHER USEFUL INFORMATION

No content