



FIRST STEP IN CREATING AN IoT STARTUP

FROM THE IDEATION TO A 3D OBJECT

Certificate awarded by: ECE Paris: Graduate School of Engineering

Welcome event: July 2nd, 2018 (morning) **Start date of courses:** July 2nd, 2018 (afternoon)

End date: July 26th, 2018 **Certificate Ceremony:** July 26th, 2018

Total ECTS: 8 **Total contact hours:** 72

Program requirement: a minimum 18 years of age

Program location: ECE Paris – 37 quai de Grenelle, 75015 Paris, France

Language of instruction: English

PROGRAM FEE: 1,850€

FEE INCLUDES:

- Orientation/Welcome Event
- Weekly cultural visits/activities
- Computer accounts at the school (WIFI access)
- Access to the school's MediaCenter
- Official transcript of grades
- Program Certificate
- Certificate Ceremony

PROGRAM COURSE LIST

Course Title	ECTS (credits)	Contact hours	Level (undergraduate or graduate)
Ideation and conception	2	18	Undergraduates or graduates students
Design 3D objects	3	30	Undergraduates or graduates students
Prototyping 3D object	3	24	Undergraduates or graduates students

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PROGRAM COURSE DESCRIPTIONS

COURSE 1

COURSE OVERVIEW:

This is an intermediate level design thinking and business thinking course in which concepts and techniques will be studied in order to give an efficient process from find the idea to the step just before prototyping. This class doesn't require previous knowledge, but more an open minded to new design concepts for an engineer. Upon completion of this course, students will have acquired an advanced knowledge of the process beginning « how to find a new startup idea » and finishing to « how to make a maquette to test my idea ».

More than a one shot process for only one idea, this course will bring students to the opportunity to be some new innovation ideas driver in big company as well as in a startup.

Course Title	Ideation and conception : from the object to the service
Learning outcomes	Learn how to use the different process to : <ol style="list-style-type: none">1. Use design thinking2. Use business thinking3. Define a functional and a close to a final object4. Challenge their finds
Pre-requisites	Curiosity and wils to go out of an engineer confort area.

COURSE OUTLINE:

- Brief history of design and business evolution
- Design thinking
- Methods of ethnology / sociology to be user centric
- New business thinking
- Practical focus to the new IoT paradigm

COURSE 2

COURSE OVERVIEW:

Intermediate software course that provides students with knowledge of the using Solidwoks software to modeling a 3D object. 3D printing is one of the tools that made rapid prototyping of a connected object possible. This hands-on course aims to take ownership of the SolidWorks 3D CAD software. The student will then be able to apprehend the machines of a FabLab to go to the physical object.

Course Title	Design 3D object
Learning outcomes	Be able to modeling a 3D object with Solidworks software
Pre-requisites	-

COURSE OUTLINE:

- Using the Interface and the basic Features
- Assembly Basics
- SolidWorks Toolbox Basics
- Basic Drawing Functions SolidWorks and eDrawings Basics
- Rotation and Sweep Features
- Smoothing Functions
- SolidWorks SimulationXpress

COURSE 3

COURSE OVERVIEW:

The aim of this course is for students to learn about rapid prototyping methods and to learn how to use a 3D printer and a laser.

Interactive pedagogy adapted to the type of skills targeted is the approach chosen for this course, while facilitating teamwork through project-based learning.

The first step will be devoted to the presentation of the existing 3D printing technologies, as well as to the printers available to the laboratory (FabLab). We approach the basic rules for preparing and printing a 3D modeled object as well as an explanation of the operation of the laser available in the FabLab.

Then, each team will launch the impression of the modeled object. The second part of the session will be devoted to working with the laser and presenting the basic rules for cutting a part

Course Title	Prototyping 3D object in a Fablab
Learning outcomes	How to create the 3D object within a fablab
Pre-requisites	Basic knowledge of 3D modeling, knowledge that they will have to use for modeling and then the printing of a 3D part (Course 2)

COURSE OUTLINE:

- Model a piece that does not exceed the dimensions of a 30mm cube.
- Basic rules for preparing and printing a 3D modeled object
- Model a part that can then be laser-worked and can be integrated into the 3D printed part
- Make your own project