

Summer Schools

Connected Devices and Smart Services

AIMS

- Evaluate technical challenges and opportunities in the internet of Things.
- Build infrastructure to collect and process data streams generated from connected devices.
- Build an assistive environment with connected devices.
- Define and build smart services for the ambient environment to assist elderly

IDENTIFICATION

CODE : DRI-INNOV-US-IOT
ECTS : 6.0

HOURS

Lectures :	30.0 h
Seminars :	0.0 h
Laboratory :	0.0 h
Project :	15.0 h
Teacher-student contact :	45.0 h
Personal work :	75.0 h
Total :	120.0 h

ASSESSMENT METHOD

- A short final examination will be arranged for final evaluation; questions will be distributed to the class in advance of the exam.
-Quizz at the end of each class
-Final project defence et prototype evaluation by a jury of faculty

TEACHING AIDS

TEACHING LANGUAGE

English

CONTACT

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CONTENT

This module comprises two courses and one project.

1- Introduction to The Internet of Things (IoT):

This course provides an overview of the concepts and challenges of the Internet and its evolution to the interconnection of people, processes, data, and things that forms the Internet of Things. It introduces principles of sensors, actuators, tags (RFID) and their connectivity and illustrates IoT case-studies in various domaines: wearable IoT, connected cars IoT, smart grids IoT, healthcare IoT, ...

2- Processing and collecting data in the Internet of Things:

This course présente sensors design with focus on hardware layers, signal processing and raw data streaming. It also introduces data transmission with Wireless networks, Bluetooth and Near Field Communication (NFC) and how to configure IoT computing boards such as Arduino, Tessels and Intel Edison.

3-Smart and Assistive Environment Project:

Students will collaborate with classmates on a health-monitoring infrastructure for elderly people at their assistive home. The infrastructure provides smart services and relies on easy programmable and interconnected devices.

The health-monitoring infrastructure aims at building wearable devices for mobile health monitoring and defining smart services for the ambient environment to assist elderly.

BIBLIOGRAPHY

PRE-REQUISITE

There are no pre-requisites for this course.

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