Modules IE.2307 / IE.2407

Electronics for IoT

Person in charge: Xun ZHANG
Pre-requisite IE.1101, IF.1201, knowledge of analogue and digital electronics fundamentals, fundamental physics
Organization : Lectures
Assessment : Study case , labs
ECTS : 5

Overview

Computation is so surround us in our daily lives realizing a vision of « Ambient Intelligence » where many devices gather and process information from many different sources to both control physical processes and to interact with human users.

Objective

In this context, the module aims at introducing students to the basics of Electronic systems for IOT applications: from the sensor to the RF transceiver.

- **Concepts**
  - Sensors and sensor networks (types , fabrication , specifications , etc)
  - Sensor to electronics interface
  - Application of specific sensors
  - Iot challenges from the hardware point of view
  - Power consumption challenges
  - Radio communication protocols
  - Communication protocols/ I^2C et SPI
- **Know-how**
  - Design and technical specification for sensor systems and Iot applications.