

# Energy Harvesting - EUR

ECTS  
**3 crédits**

Composante  
**Sciences Fondamentales et Appliquées**

## En bref

- # **Langue(s) d'enseignement:** Anglais
- # **Ouvert aux étudiants en échange:** Non

## Présentation

### Description

The part 1 concerns the management of energy integrated into a smart communicating object: the different parts of the sensors associated with their energy costs: radiofrequency, sensors, embedded  $\mu$ c, optimized smart power embedded software, as well as the transition between energy recovery and its storage performed by specialized integrated components.

The part 2 will explore with a device physics approach the most used devices for energy harvesting (RF, piezo, thermo, photo conversion into electricity) and storage (batteries and supercapacitors) for IoT. RF energy transport will be also addressed. External quantum efficiencies and device sizing calculations will be addressed according to the external condition (indoor/outdoor)

### Heures d'enseignement

CM	CM	12h
TD	TD	18h

## Pré-requis obligatoires

Methodology part of electronic design of IoT

Physics of components and semiconductors in IoT