

IE.3516 - Smart Cities

Person in charge : Xun ZHANG

Prerequisites : knowledge of basics in analog and digital electronics, fundamentals of physics, computer science, big data, security

Organization : Lectures, Seminars, project et workshops

Assesment : Examination, Project

ECTS : 5

Workload: 120h including 45h face-to-face

Teamwork: Yes

Context

The term "smart" can be translated as "intelligent" but also "clever" or "ingenious", associating reasoning abilities with creative qualities. It refers to both a territory, a concentration of individuals, and a community. However, the concept is also strongly criticized. It would be a pleonasm, as the city is by definition intelligent since it is a pure product of human intelligence. It would reduce the city to a system where technology would be the solution to all problems. This could result in an "algorithmic society" where machines would make decisions instead of humans. It would also be limiting because it is reserved for "the city" while it can be applied to all territories.

This module aims to provide engineering students with a vision of "smart city" that involves the design of smart city using innovative digital technologies ranging from the process of a smart city approach.

Objectives and Knowledge

The module aims to raise students' awareness of various essential issues during the design of a smart city. The teachings given in this module allow the development of concepts.

Introduction to the smart city to understand the challenges of the smart city, a guide for strengthened economic development

Innovative digital technologies applied in the smart city process to implement a smart city project

Data security related to the smart city and knowledge of personal data policies

Pedagogical Approach

- Seminars organized between ISEP and partners working in this field
- This module will present the main concepts related to the design of communicating objects for applications in the following areas: telemedicine, transport, "smart home" and "smart city". It will particularly emphasize current and future developments, and the still-open issues of these communicating modules.

- The main concepts and keywords, as well as concrete examples, will be developed and implemented through practical examples proposed to the students. Mini-projects or workshops will allow students to apply the concepts studied in class and design a communicating object.

Assesment

The evaluation will be carried out through continuous assessment during mini-projects and workshops, and through a written exam that will assess the knowledge acquired through the various issues addressed.