Universidad Zaragoza

Academic Year/course: 2023/24

62949 - Internet of Things

Syllabus Information

Academic year: 2023/24
Subject: 62949 - Internet of Things
Faculty / School: 110 - Escuela de Ingeniería y Arquitectura
Degree: 562 - Master's in Product Development Engineering
ECTS: 4.5
Year: 1
Semester: Second semester
Subject type: Optional
Module:

1. General information

The subject and its expected results respond to the following approaches and objectives:

- Complete the training of graduates, especially in Engineering of Industrial Design and Product Development, with the knowledge not covered in their previous Grade.
- Provide students with both conceptual and practical resources to apply in their professional or research work.
- Strengthen the ability to create new IoT products and services with a strong technological component.
- Encourage judgment and creativity of the students.

These approaches and objectives are aligned with some of the Sustainable Development Goals (SDG) of the 2030 Agenda (https://www.un.org/sustainabledevelopment/en/), in such a way that the acquisition of the learning outcomes of the subject provide training and competence contributing to target 8.2 of Goal 8 and target 9.4 of Goal 9.

2. Learning results

The student, to pass this subject, must demonstrate the following results:

- Knows the fundamentals of the connectivity of things through networks, as well as the functionality and possibilities of communication between different types of sensors and actuators.
- Knows and understands the possible application in different professional fields of integrated product/service, device/s and user/s connectivity systems.
- Is able to understand and participate in the design process of an integrated connectivity system. It is capable of prototyping product developments and/or services related to the Internet of Things (IoT).

3. Syllabus

The course will address the following topics:

Theory

- Internet and the evolution of the web
- Types of network computing
- Internet of things
- Design of intelligent devices
- Electronic communications between devices
- Interconnectivity and interoperability

Practice

- Analysis and design of IoT architectures
- Software / hardware integration
- Technical validation and user evaluation
- Value proposition: Minimum Viable Product (MVP)

- IoT professional solutions

4. Academic activities

Master classes: 10 hours. Theoretical-applied classes with examples to promote active participation.

Practice sessions: 30 hours. Interactive practical classes on design, development, integration and implementation of professional IoT solutions. The objective of these sessions is to analyze, design, evaluate and propose valuable solutions following the concepts and techniques worked on in the theoretical part through applied exercises, success stories, participatory methodologies, etc.

Application work: 30 hours. Practical work (individual or in groups) so that the student can autonomously demonstrate what they have learned in the subject.

Assessment tests: 2.5 hours.

Tutoring: 10 hours.

Personal study: 30 hours.

5. Assessment system

- Continuous assessment or Final evaluation with a value of 30% of the final qualification.
- Course works with a value of 70% of the final qualification.

Following the regulations of the University of Zaragoza in this regard, a global assessment test will also be scheduled for those students who decide to opt for this second system.