Universidad Zaragoza

Year : 2019/20

29839 - Electronic Design Laboratory

Syllabus Information

Academic Year: 2019/20
Subject: 29839 - Electronic Design Laboratory
Faculty / School: 110 - Escuela de Ingeniería y Arquitectura
Degree: 440 - Bachelor's Degree in Electronic and Automatic Engineering
ECTS: 6.0
Year: 4
Semester: First semester
Subject Type: Optional
Module: ---

1.General information

1.1.Aims of the course

1.2.Context and importance of this course in the degree

1.3.Recommendations to take this course

2.Learning goals

2.1.Competences

2.2.Learning goals

2.3.Importance of learning goals

3.Assessment (1st and 2nd call)

3.1.Assessment tasks (description of tasks, marking system and assessment criteria)

4.Methodology, learning tasks, syllabus and resources

4.1.Methodological overview

This is a fully practical course in which the students develop projects at the laboratory using the Project-Based Learning methodology. The students have to follow all the stages of a project from the conception to the constructions of a prototype. By means of the methodology, all the learning objectives are reached in this process. Furthermore, as this methodology is applied to teams, students can reach social competences related to the team working, collaborative learning and communication skills. Teams can be augmented by the participation of students of Industrial Design increasing those competences to a more professional level thanks to the interdisciplinary aspect of the collaboration.

4.2.Learning tasks

The course includes the following learning tasks:

- The activities of the course lean on the learning methodology called Project-Based Learning applied to teams.
- Some theoretical sessions and workshops will be held about specific design items.
- There will be two projects to develop. The first one, smaller, acts as training to address the main project. The students practice the selection of electronic components, learn the use of CAD tools and develop mounting skills.
- The main objective is to develop a whole project from the initial conception to the construction of a working prototype.
- The teams will program working meetings at all the stages of the work and will report the lecturers about the advances of the project.

- Eventually, the project will be shared with teams of students of Industrial Design. This entails a close collaboration intended to develop interdisciplinary team working skills by carrying out an industrial project with an electronic system inside.
- The assessment is considered an important point in the learning process. Teams will hold an oral presentation in front of the lecturers and the other teams, and this will be an enriching occasion to learn from each other.

4.3.Syllabus

The course will address the following topics:

- Methodology and planning.
- Electronic components and technologies: research and selection.
- Specification of the electronic Project.
- Electronic design using CAD programs, design of a printed circuit board, prototyping and tuning.
- Documentation and oral presentation.

4.4.Course planning and calendar

All the sessions will be hold in an electronic laboratory. The schedule and timetable of all activities including assessment, will obey the directions of the University and the School.

4.5.Bibliography and recommended resources