Universidad Zaragoza

Academic Year/course: 2023/24

28834 - Integrated Project

Syllabus Information

Academic year: 2023/24
Subject: 28834 - Integrated Project
Faculty / School: 175 - Escuela Universitaria Politécnica de La Almunia
Degree: 424 - Bachelor's Degree in Mechatronic Engineering
ECTS: 6.0
Year: 4
Semester: First semester
Subject type: Compulsory
Module:

1. General information

The objective of the subject is to train the student in the realization of mechatronic projects by applying multidisciplinary knowledge for the analysis, design, development, prototype manufacturing and documentation. Not only the fundamentals will be studied, but the aim is to achieve analytical skills, and design. The student must be able to build in the laboratory and implement a working prototype of the mechatronic solution proposed during the subject.

These approaches and objectives are aligned with the Sustainable Development Goals (SDGs) of the 2030 Agenda of United Nations (https://www.un.org/sustainabledevelopment/es/), such that the acquisition of learning results of the subject provides training and competence to contribute to some extent to the achievement of targets 4.3 and 4.4 of Goal 4, and target 5.1 of Goal 5.

2. Learning results

- Understanding of concepts related to the areas of knowledge of the degree.
- Develop, plan and manage technical projects.
- Understand, order and transmit information obtained from different sources.
- Present in a coherent way, orally and in writing, the work done.
- Motivation and self-learning capacity.
- Knowledge of current regulations.
- Drawing and interpretating plans and diagrams according to the appropriate standards and symbology.

3. Syllabus

Topic 1. State of the art and technical specification of a mechatronic project.

Topic 2. Identification by modules. Block diagrams and information flows.

Topic 3. Modeling and simulation of mechatronic systems.

Topic 4. Design of mechatronic systems.

Topic 5. Prototype manufacturing.

Topic 6. Programming, verification and functional testing.

Topic 7. Cost analysis and Documentation.

Topic 8. Final work

4. Academic activities

Lectures: 30 hours

The teacher will explain the theory of the subject and solve problems relevant to the calculation, design and development of a mechatronic system.

Laboratory practices: 30 hours

Highly recommended for a better understanding of the subject, since they show in real operation elements whose calculation is carried out in the lectures.

Study and personal work: 90 hours

Study and personal work. This non-attendance part is valued at about 90 hours, necessary for the study of theory, problem solving and work completion.

5. Assessment system

The subject will be evaluated in the continuous assessment mode by means of the following activities:

- **Laboratory practicals and evaluable activities** (25% of the grade, minimum 5 out of 10)

In each of the practices, the results obtained and the process followed will be evaluated. Once the practice has been completed, a report of the practice is handed in. This activity will be carried out individually.

- **Subject project** (75% of the grade, minimum 5 out of 10)

A subject work will be proposed throughout the subject. This is an initial specification document that proposes the design and manufacture of a mechatronic solution. The project will be defined at the beginning of the term and will be communicated at class and at http://moodle.unizar.es/, and the student will be guided in its realization during the term.

To be eligible for the Continuous Assessment system, students must attend at least 80% of the face-to-face classes (practicals, technical visits, lectures, etc.).

Global assessment test.

Following the regulations of the University of Zaragoza in this regard, if the student has not passed any of these activities during the semester, they will have the opportunity to pass the subject by means of a global test in two official calls.