

## 39633 - Mechatronic Systems: Design and Maintenance

### Syllabus Information

**Academic year:** 2024/25

**Subject:** 39633 - Mechatronic Systems: Design and Maintenance

**Faculty / School:** 175 - Escuela Universitaria Politécnica de La Almunia

**Degree:** 608 -

**ECTS:** 6.0

**Year:** 4

**Semester:** First semester

**Subject type:** Compulsory

**Module:**

### 1. General information

The purpose of this subject is for the student to acquire the necessary knowledge to understand the fundamentals and applications of the design, maintenance and safety of mechatronic systems.

It implies an important impact on the acquisition of the competences of the degree, in addition to providing a useful training in the following fields the performance of the functions of the Mechatronic Engineer related to the fields of design, maintenance and safety.

### 2. Learning results

- Select the most suitable material or treatment for the application.
- Drawing and interpreting plans and diagrams according to the appropriate standards and symbology.

### 3. Syllabus

#### **THEORETICAL CONTENTS.**

- TOPIC 1: Design of mechatronic systems.
- TOPIC 2: Maintenance of mechatronic systems.
- TOPIC 3: Safety of mechatronic systems.

#### **PRACTICAL CONTENTS.**

- To work with the necessary tools, techniques and methods involved in the design process of mechatronic systems, from their initial conception to the planning of their manufacturing.
- Apply the most common methodologies when planning a maintenance typology, based on situations and analysis of the results obtained.
- Basic notions of application of safety elements in mechatronic systems.

### 4. Academic activities

Bearing in mind that the degree of experimentality considered for this course is high, the indicative time distribution of the academic activities for the 15 weeks of duration will be as follows:

- 27 hours of lectures, 40% of theoretical exposition and 60% of problem solving.
- 27 hours of laboratory practice.
- 6 hours of evaluation tests.
- 90 hours of study and personal dedication.

As well as group and individual tutoring, at the request of the students.

### 5. Assessment system

#### **CONTINUOUS EVALUATION SYSTEM.**

- Individual activities: At least 80% must be completed in order to qualify for this evaluation system, due to its nature. Its minimum average grade will be 5 out of 10, for its contribution to 10% of the final grade.
- Laboratory practices: Its minimum average grade will be 5 out of 10, for its contribution to 15% of the final grade.
- Jobs: Its minimum average grade will be 5 out of 10, for its contribution to 25% of the final grade.
- Written tests: Its minimum average grade will be 5 out of 10, for its contribution to 50% of the final grade, as long as there is no grade lower than 3 in any of the tests, in which case the activity is considered suspended. Two tests will be conducted:

- Exhibit 1: Topic 2.
- Exhibit 2: Topic 3.

#### **GLOBAL EVALUATION SYSTEM.**

- Laboratory practices: Its minimum average grade will be 5 out of 10, for its contribution to 15% of the final grade.
- Jobs: Its minimum average grade will be 5 out of 10, for its contribution to 25% of the final grade.
- Written examination: Its minimum grade will be 5 out of 10, for its contribution to 60% of the final grade.

#### **6. Sustainable Development Goals**

- 4 - Quality Education
- 5 - Gender Equality
- 9 - Industry, Innovation and Infrastructure