Universidad Zaragoza

Academic Year: 2025/26

29639 - Industrial Maintenance and Auxiliary Installations

Teaching Plan Information

Academic year: 2025/26
Subject: 29639 - Industrial Maintenance and Auxiliary Installations
Faculty / School: 110 - Escuela de Ingeniería y Arquitectura
Degree: 430 - Bachelor's Degree in Electrical Engineering
ECTS: 6.0
Year: 4
Semester: First semester
Subject type: Optional
Module:

1. General information

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

The objective of the course is that the student obtains knowledge and skills that allow the student to understand the maintenance activity in the industrial electrical field and to structure a maintenance service adapted to the needs and singularities of each company.

2. Learning results

The student, in order to pass this subject, must demonstrate the following results...

Identify, classify and describe the different levels of maintenance.

Plan and structure maintenance activities in electrical installations.

Know and select the characteristics of equipment in the maintenance activities, preferably predictive

Size and optimize human resources dedicated to maintenance.

Manage and control the stock of spare parts.

Understand the industrial maintenance activity from an engineering and economic point of view, never losing sight of the cost-benefit ratio.

3. Syllabus

The contents to be developed are detailed in the syllabus and are structured in the following blocks:

1. Industrial maintenance
2. Organization and planning of maintenance in industry.
3. Industrial maintenance management
4. Scope of electrical maintenance
5. Measurement techniques used in electrical maintenance
6. Electrical hazards and safety in electrical installations
7. Corrective maintenance in electrical systems.
8. Preventive maintenance in electrical systems.
9. Predictive maintenance in electrical systems.
10. Regulatory maintenance in electrical systems.
11. Maintenance 4.0.
12. Monitoring, maintenance and energy management.

4. Academic activities

Lectures (30 hours).

Sessions of exposition and explanation of contents. The concepts and fundamentals will be presented and illustrated with real examples . Student participation will be encouraged through questions and brief discussions.

Laboratory (30 hours).

The student will have the necessary means for the realization of the practice, which they will have to prepare in advance.

Other evaluable activities.

They will be able to count on a part of personal work of the student and a part already counted in the sections Practical Classes, Problems and Laboratory.

Assessment

In addition to the grading function, the assessment is also a learning tool with which the learner checks the degree of understanding and assimilation they have achieved.

Tutoring.

Direct attention to the student, identification of learning problems, orientation in the subject, attention to exercises and assignments.

Supervised work (20 hours).

Periodically, exercises and cases will be proposed to the student to develop on their own. This section also includes the preparation of laboratory practices and additional activities.

Individual study (70 hours).

The student's continuous work will be encouraged through the homogeneous distribution throughout the semester of the different learning activities.

5. Assessment system

3.1. Type of tests and their value on the final grade and assessment criteria for each test

The student must demonstrate that has achieved the expected learning outcomes through the following assessment activities.

The evaluation of the subject will be of a **global** nature and will include the following activities:

1. Assessment activities during the teaching period:

1.1. Laboratory Practices 40%

The following will be evaluated in the practicals: the laboratory sessions and the report of each one of them. The previous preparation for each of the practice sessions, the initiative, the participation in them and the quality of the report presented will be valued. These practices can be virtualized.

1.2. Assignments and Evaluable Activities 20%

In orderto encourage the student's continuous work, in addition to the laboratory practices, other evaluable activities will be carried out throughout the semester at . These activities will consist of the presentation of a practical case, in which both the quality of the work prepared and the ability and clarity to defend itwill be evaluated.

1.3. Exercises 40%

Tests of different parts of the contents may be proposed during the term,

2. Assessment activities on the dates scheduled by the center for the Official Calls:

2.1. Final Exam (50%)

It will consist of theoretical (60%) and practical (40%) assumptions on the knowledge developed in the subject.

6. Sustainable Development Goals

7 - Affordable and Clean Energy
9 - Industry, Innovation and Infrastructure
12 - Responsible Consumption and Production