

29835 - Electrical Installations

Syllabus Information

Academic year: 2023/24

Subject: 29835 - Electrical Installations

Faculty / School: 110 - Escuela de Ingeniería y Arquitectura
326 - Escuela Universitaria Politécnica de Teruel

Degree: 440 - Bachelor's Degree in Electronic and Automatic Engineering
444 - Bachelor's Degree in Electronic and Automatic Engineering

ECTS: 6.0

Year: 4

Semester: First semester

Subject type: Optional

Module:

1. General information

1. General Information

The objectives of this subject are that the student learns to calculate and design electrical installations, using their specific regulations and legislation, and to acquire a set of functional fundamentals that will allow them to advance in matters of an electrical nature.

These approaches and objectives are aligned with some of the Sustainable Development Goals, SDGs, of the Agenda 2030 (<https://www.un.org/sustainabledevelopment/es/>) and certain specific targets, so that the acquisition of the learning results of the subject provides training and competence to the student to contribute to some extent to the achievement of target 7.2 of goal 7 and target 9.1 of goal 9.

2. Learning results

- Calculate and design low and medium voltage electrical installations.
- To know and select the characteristics of materials, cables, switchgear and measuring equipment used in low and medium voltage electrical installations.
- Understand, select and properly use electrical protection techniques.
- Select and use appropriate tools for the design of low and medium voltage electrical installations.
- Know and use the specific legislation and regulations for low and medium voltage electrical installations identify, classify and describe the different types of electric power generation systems and power plants.

3. Syllabus

The contents to be developed will be the following:

- Distribution of electric power.
- Low voltage switchgear and electrical protection.
- Design of low voltage electrical installations.
- Grounding installations.
- Introduction to auxiliary installations.
- Contracting and conditions of electricity supply.
- Medium voltage installations. Switchgear.
- Electrical substations and transformer stations. General characteristics. Protections.
- Introduction to power plants.

4. Academic activities

- Theoretical and practical classes (45 hours). Sessions of exposition and explanation of contents, together with problems and cases of practical application of such contents.
- Laboratory Practices (15 hours). In each session, the student will be provided with a script of the practice to be performed, which will be accompanied by explanations and necessary indications for its realization.
- Supervised work (18 hours). Completion of a course work, in which the contents of the course developed in the different topics of the subject are applied in a practical way.
- Individual study (68 hours).
- Assessment tests (4 hours)

- Tutoring. Individualized attention to the student to solve doubts.

At EUPT this subject is taught in two different modalities: face-to-face (all of the above applies) and blended learning (the theoretical and practical classes will be developed through recorded classes and virtual tutorials; half of the classes will be held in the classroom, concentrated in one or two days to be agreed with the students).

5. Assessment system

The subject will be assessed in the global assessment modality by means of the following activities:

ASSESSMENT PROCEDURE 1 The assessment activities of **a student who has passed the practices** in the teaching period will be:

- Laboratory practicals (10% of the grade, with a minimum of 5 out of 10).
- Supervised work (70% of the grade). Students who have not completed the tutored work during the teaching period will have to take written tests to substitute this work.
- Theoretical written test (20% of the grade).

In order to pass the subject following the evaluation procedure 1, the student must have completed all the practical sessions and the sum of the tutored work and the grade of the theoretical written test must be at least 4 out of 10 out of 10 of the maximum value of the grade, having scored in both.

ASSESSMENT PROCEDURE 2 The assessment activities of **a student who has not passed the practices** in the teaching period will be:

- Laboratory practice exam (Pass or Fail grade).
- Supervised work (70% of the grade). Students who have not completed the tutored work during the teaching period will have to take written tests to substitute this work.
- Theoretical written test (30% of the grade).

In order to pass the subject following the assessment procedure 2, the student must have completed all the practical sessions and the sum of the tutored work and the grade of the theoretical written test must be at least 5 out of 10 of the maximum value of the grade, having scored in both.