Universidad Zaragoza

Year : 2020/21

30036 - Electrical Technology

Syllabus Information

Academic Year: 2020/21
Subject: 30036 - Electrical Technology
Faculty / School: 110 - Escuela de Ingeniería y Arquitectura
Degree: 436 - Bachelor's Degree in Industrial Engineering Technology
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

The learning process that has been designed for this course is based on the following:

Classes of theory, problems and practices, with active participation of the student in all of them.

- Classes of theory and problems: will be presented the concepts of the contents of the subject, with practical examples.
- Practices: The student will perform calculations by computer with advanced software for design of electrical installations, will understand the operation of protection devices, and will program PLCs.

4.2.Learning tasks

This is a 6 ECTS course organized as follows:

Theory sessions (45 h)

These constitute the central teaching nucleus. The technique followed in these classes is fundamentally expository. Student participation will be encouraged through questions and comments. The student will be encouraged to work prior to class on the problems that will be solved in the classroom.

Practice sessions (15 h)

Students will have practice scripts provided in advance, with a description of the assemblies and the steps to follow for the development of the activity. During the development of the practices, the student will fill out a report of results.

Assignments (30 h)

The resolution of practical cases will be proposed, covering in a comprehensive manner aspects of the design and calculation of industrial electrical installations.

Exams, evaluation, and autonomous work and study (60 h)

This section includes the elaboration of the previous work required in the preparation of the ~~laboratory~~ practices. It is very important that the student develop (in a constant way, and distributed throughout the semester) autonomous work on the study and resolution of problems. Periodically, the student will be proposed exercises and cases to develop, some of which will be resolved in the classroom.

Tutorial

Students who wish to do so can ask the teacher questions about the subject. For this purpose, the student has a timetable for tutorials.

4.3.Syllabus

Topics

1. Introduction
2. Electrical cables
3. Overcurrent protection devices
4. Protection against indirect contacts
5. Electric motors
6. Wired logic
7. Reactive power compensation
8. Transformation centres
9. Works on electrical installations
10. Electricity supply contract
11. Fundamentals of lighting

Practices

1. Calculation of electrical installations (3 h)
2. Protection against indirect contacts (3 h)
3. Control of electrical systems I (3 h)
4. Control of electrical systems II (3 h)
5. Network analyzers. Measurement of electrical parameters (3 h)

4.4.Course planning and calendar

Further information concerning the timetable, classroom, office hours, assessment details regarding this course will be provided on the first day of class or please refer to the "Escuela de Ingeniería y Arquitectura" website https://eina.unizar.es/estudios

4.5.Bibliography and recommended resources

Link:
http://biblos.unizar.es/br/br_citas.php?codigo=30036&year=2019