

30014 - Basic principles of electrical technology

Información del Plan Docente

Academic Year	2017/18
Faculty / School	110 - Escuela de Ingeniería y Arquitectura
Degree	436 - Bachelor's Degree in Industrial Engineering Technology
ECTS	6.0
Year	2
Semester	First semester
Subject Type	Compulsory
Module	---

1.General information

1.1.Introduction

This course presents the Circuit Theory as a fundamental technique to describe and analyze most of the fields of Electrical and Electronic Engineering. It has an instrumental orientation so Circuit Theory is studied by itself. Electrical/Electronic courses in the following semesters will use it to analyze real engineering problems. Despite this, the course also has an applied character, hence in its development some of the basic problems of the Electrical Engineering are presented.

From the experimental point of view, the course provides the skills needed for the use of measuring instruments of the basic electrical quantities.

1.2.Recommendations to take this course

1.3.Context and importance of this course in the degree

1.4.Activities and key dates

2.Learning goals

2.1.Learning goals

2.2.Importance of learning goals

3.Aims of the course and competences

3.1.Aims of the course

3.2.Competences

4.Assessment (1st and 2nd call)

4.1.Assessment tasks (description of tasks, marking system and assessment criteria)

5.Methodology, learning tasks, syllabus and resources

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5.1.Methodological overview

The methodology of the course has been designed on the basis that the course is at the beginning of the syllabus set of electrical/electronic courses and hence it will be followed by a wide range of students. The number of credits assigned by the syllabus to the course imposes optimize the quantity and quality of knowledge that students should acquire with it. Theoretical concepts and practical problems will be taught in the 3 hours a week lectures. Several laboratory sessions will serve to link theory with practice and a way to learn the use of basic measurement instruments. However, to encourage students continuous work, as well as to gain feedback about the learning outcomes acquired by them, several assessment tasks and activities will be scheduled throughout the semester.

5.2.Learning tasks

5.3.Syllabus

- 1.- Fundamental quantities and elements of circuit
- 2.- Direct current circuits. Analysis methods
- 3.- Steady state in AC circuits
- 4.- Ideal magnetic coupling
- 5.- Power in AC circuits

- 6.- Introduction to three-phase systems

5.4.Course planning and calendar

5.5.Bibliography and recommended resources