

29642 - Electrical Measurements

Información del Plan Docente

Academic Year	2017/18
Faculty / School	110 - Escuela de Ingeniería y Arquitectura
Degree	430 - Bachelor's Degree in Electrical Engineering
ECTS	6.0
Year	4
Semester	Second semester
Subject Type	Optional
Module	---

1.General information

1.1.Introduction

Brief presentation of the subject

In general, instruments and measurement techniques have been taught in the introductory courses of the degree of Electrical Engineering. This course aims to deeply review the various problems that arise in real measurement procedures: Uncertainties associated with the measurement procedures, characterization of the instruments used in electrical measures and their limitations and methodologies, computer-controlled measurements. Additionally any physical, both electrical and non-electrical quantity can be acquire by sensors that transform it to an electrical quantity. In this sense, the course aims to address a broad review of the different types of sensors that are regularly employed in industry. The course is strongly oriented towards using real instruments in the laboratory while it is also complemented with theoretical foundations in classroom.

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

5.1. Methodological overview

The methodology of the course is based on the following:

Classroom lectures
Laboratory sessions
Written reports
Problem solving

5.2. Learning tasks

5.3. Syllabus

- 1.- Sensors
- 2.- Measuring Instruments: Digital multimeters, oscilloscopes, current clamps
- 3.- Uncertainty
- 4.- Computer based measurements. SCPI

5.4. Course planning and calendar

5.5. Bibliography and recommended resources

[BB: Bibliografía básica / BC: Bibliografía complementaria]

- [BB] Chacón de Antonio, Francisco Julián. Medidas eléctricas para ingenieros / Francisco Julián Chacón de Antonio . - 2ª ed. Madrid : Universidad Pontificia Comillas, 2007
- [BB] Creus Solé, Antonio. Instrumentación industrial / Antonio Creus Solé . 8ª ed. Barcelona : Marcombo, 2011
- [BB] Instrumentación electrónica / Miguel A. Pérez García ... [et al.] . - 2ª ed., 4ª reimp. Madrid : International Thomson Editores Spain Paraninfo, 2008

Listado de URL

- Documentos del Centro Español de Metrología [<http://www.cem.es>]