

30330 - Electronic Instruments

Información del Plan Docente

Academic Year	2016/17
Academic center	110 - Escuela de Ingeniería y Arquitectura
Degree	438 - Bachelor's Degree in Telecommunications Technology and Services Engineering
ECTS	6.0
Course	3
Period	Second semester
Subject Type	Compulsory
Module	---

1.Basic info

1.1.Recommendations to take this course

1.2.Activities and key dates for the course

2.Initiation

2.1.Learning outcomes that define the subject

2.2.Introduction

3.Context and competences

3.1.Goals

3.2.Context and meaning of the subject in the degree

3.3.Competences

3.4.Importance of learning outcomes

4.Evaluation

5.Activities and resources

5.1.General methodological presentation

The learning process will be based in three different levels: theoretical classes, problem solving classes and laboratory sessions. The level of the student participation will be high.

-In the theory classes, the basics will be presented, but also materials with which the students will need to work on. Examples and case studies will be requested to be presented by students, even some lessons will be interactive and students will have to present some parts of the class to others with the provided materials (these are part of the activities under evaluation)

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- Problems and cases will be solved in the problem classes. Students will be requested to solve the problems and some times present to others.

- Several very guided laboratory lessons will be done in reduced groups. These will showcase hands-on examples of circuits explained in class and virtual instruments will also be taught.

- Depending on the overall number of students, guided practical instrumentation projects will be requested. These will be small but useful tools, in general based in either Arduino or Labview comprising a set of sensors, signal conditioning and acquisition and some form of information presentation.

5.2.Learning activities

1. Classes with presentations (25h)
2. Problem solving classes (15h)
3. Laboratory sessions (15h)
4. Self - work or group work of activities that will be evaluated (15h)
5. Personal work and study (70 h)
6. Personal sessions with teacher (5h)
7. Evaluation sessions (10h)

5.3.Program

1. Introduction
2. Signal conditioning
3. Sensors
4. Signal conversion and transmission
5. Advanced instrumentation systems

5.4.Planning and scheduling

Following the official calendar

5.5.Bibliography and recommended resources

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- 1. Instrumentación electrónica / Miguel A. Pérez García ... [et al.] . - 2ª ed., 4ª reimp. Madrid : International Thomson Editores Spain Paraninfo, 2008
- 2. Pallás Areny, Ramón. Sensores y acondicionadores de señal / Ramón Pallás Areny ; [coordinador editorial, Carles Parcerisas Civit] . - 4a ed. Barcelona : Marcombo : Boixareu, D.L. 2003
- 3. Pallás Areny, Ramón. Adquisición y distribución de señales / Ramón Pallás Areny . - [1a. ed.] Barcelona : Marcombo Boixareu, D.L.1993
- 4. Pallà s Areny, Ramon. Instrumentos electrónicos básicos / Ramon Pallà s Areny Barcelona : Marcombo, D. L. 2006
- 5. Doebelin, Ernest O.. Diseño y aplicación de sistemas de medición / Ernest O. Doebelin . [1a. ed., 2a. imp.] México, D.F. : Diana, 1981