



Year : 2018/19

30330 - Instrumentation Electronics

Syllabus Information

Academic Year:	2018/19
Subject:	30330 - Instrumentation Electronics
Faculty / School:	110 -
Degree:	438 - Bachelor's Degree in Telecommunications Technology and Services Engineering
ECTS:	6.0
Year:	3
Semester:	Second semester
Subject Type:	Compulsory
Module:	---

General information

Aims of the course

Context and importance of this course in the degree

Recommendations to take this course

Learning goals

Competences

Learning goals

Importance of learning goals

Assessment (1st and 2nd call)

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

Methodology, learning tasks, syllabus and resources

Methodological overview

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)

- 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.

Learning tasks

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)

Syllabus

1. Introduction
2. Signal conditioning
3. Sensors
4. Advanced instrumentation systems

Course planning and calendar

Following the official calendar

Bibliography and recommended resources

- 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