

29826 - Electronic Instruments

Información del Plan Docente

Academic Year	2016/17
Academic center	110 - Escuela de Ingeniería y Arquitectura 326 - Escuela Universitaria Politécnica de Teruel
Degree	440 - Bachelor's Degree in Electronic and Automatic Engineering 444 - Bachelor's Degree in Electronic and Automatic 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 course will be based on combining theoretical explanations with practical exercises and laboratory work.
- Lectures will provide theoretical background on fundamentals of instrumentation and sensors
- Case studies and real applications will be worked out at the classroom

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- The students will do laboratory work related to sensors and instrumentation systems
- Individual and group assignments will be proposed
- Student participation is considered very important in order to acquire the learning outcomes and skills needed

5.2.Learning activities

Classroom activities: 2,4 ECTS (60 hours)

1) Course lectures (T1) (30 hours).

Fundamentals of electronic instrumentation and sensors will be developed, mixing theoretical concepts and practical applications.

2) Case studies (T2) (15 hours)

Different case studies will be worked out at the classroom. Students are encouraged to prepare them in advance. Assignments could also be worked out in this part.

3) Laboratory work (T3) (15 hours).

Several laboratory sessions will be carried out in small groups. Each session will be evaluated in the laboratory. Students have to prepare sessions in advance.

personal work: 3,6 ECTS (90 hours)

4) Assignments (T6) (20 hours)

Individual and group assignments will be proposed

5) Personal study (T7) (66 hours)

Continuous study will be promoted among students. They can also attend tutorials to solve the specific problems they can face in the course.

6) Evaluation activities (T8) (4 hours)

Assessment will be based on coursework (laboratory work and assignments) and final examination

5.3.Program

1. Data acquisition systems
2. A/D and D/A converters

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3. Sensors
4. Signal conditioning circuits and amplifiers
5. Electromagnetic compatibility and noise
6. Filters
7. Signal and data transmission

Note. A more detailed program will be provided at the beginning of the course.

5.4.Planning and scheduling

Timetables for classroom and laboratory sessions will be published prior to the beginning of the course at the web of EINA <https://eina.unizar.es/> and EUPT <https://eupt.unizar.es/>

A course timetable is also provided to the student, which includes a detailed description of the dates for submission <https://moodle2.unizar.es/add/>

5.5.Bibliography and recommended resources