28827 - Electronic Instruments

Información del Plan Docente

Academic Year	2017/18
Faculty / School	175 - Escuela Universitaria Politécnica de La Almunia
Degree	424 - Bachelor's Degree in Mechatronic Engineering
ECTS	6.0
Year	3
Semester	Second semester
Subject Type	Compulsory
Module	---

1.General information

1.1.Introduction

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

1 Theory Classes: The theoretical concepts of the subject are explained and illustrative examples are developed as support to the theory when necessary, focus on calculation, design and development of a mechatronic system

2. Laboratory Workshop. These classes are highly recommended for a better understanding of the concepts because those items whose calculation is done in theory clases are shown in working mode.

3. Tutorials related to any concept of the subject. This activity is developed in a presencial mode with a defined schedule or through the messaging and forum of the virtual classroom Moodle.

5.2.Learning tasks

Theory Classes. it will take 2 hours per week till the 40 hours, neccesary to acomplish the objetives of the subject study, will be reached

Laboratory Workshop. it will take 10 seassons of 2 hours duration. The group is divided up into various groups, according to the laboratory capacity.

Study and personal work. This non-presential part is valued in about 90 hours, necessary for the study of theory, problem solving and revision of documents

Individual tutorials. Each teacher will publish a schedule of attention to the students throughout the four-month period

5.3.Syllabus

The contents are distributed in seven teaching units forming treatment indivisible blocks. These topics collect the contents needed for the acquisition of predetermined learning outcomes.

Topic I	**Introduction to instrumentation systems.**
Topic II	**Signal conditioning circuits.**
Topic III	**Temperature Measurement.**
Topic IV	**Measurement of position, displacement and velocity.**
Topic V	**Measurement of strain, strength, weight and torque.**
Topic VI	**Measurement of acceleration, vibration and shock.**
Topic VII	**measurement of flow, level and pressure of fluids.**

5.4.Course planning and calendar

28827 - Electronic Instruments

Schedule of Face-to-face generic activities and presentation of papers
The dates of the final exams will be those that are officially published at
http://eupla.unizar.es/index.php/secretaria/informacion-academica/distribucion-de-examenes
In continuous evaluation methodology, the students delivering several partial works and a final work whose schedule will be defined during the course.
* The final dates will be published in digital platform (moodle)
The overall test for not continuous evaluation system will be set at the end of the semester and will consist of a written test based on theoretical arguments and problems of all topics covered in class.

5.5.Bibliography and recommended resources

Bibliography

THE UPDATED BIBLIOGRAPHY OF THE SUBJECT CAN BE CONSULTED THROUGH THE LIBRARY WEB PAGE
http://psfunizar7.unizar.es/br13/eBuscar.php?tipo=a

BB	Instrumentación electrónica / Miguel A. Pérez García ... [et al.] . - 2ª ed., 4ª reimp. Madrid : International Thomson Editores Spain Paraninfo, 2008
BB	Pallás Areny, Ramón. Sensores y acondicionadores de señal / Ramón Pallás Areny. - 3a. ed. corr. Barcelona : Marcombo : Boixareu, D.L. 1998
BB	Webster, Jhon G.. The Measurement, Instrumentation and Sensors Handbook/ Jhon G. Webster.. 1ª edición CRC Press:1998

Material	**Soporte**
Topic theory notes Topic presentations	Paper/repository
Topic theory notes Topic presentations Topic problems Related links	Digital/Moodle E-Mail

28827 - Electronic Instruments

technical manuals	Paper/repository Digital/Moodle