28839 - Advanced Instrumentation

Información del Plan Docente

Academic Year	2018/19
Subject	28839 - Advanced Instrumentation
Faculty / School	175 - Escuela Universitaria Politécnica de La Almunia
Degree	424 - Bachelor's Degree in Mechatronic Engineering
ECTS	6.0
Year	4
Semester	Second semester
Subject Type	Optional
Module	---

1.General information

1.1.Aims of the course

1.2.Context and importance of this course in the degree

1.3.Recommendations to take this course

2.Learning goals

2.1.Competences

2.2.Learning goals

2.3.Importance of learning goals

3.Assessment (1st and 2nd call)

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

4.Methodology, learning tasks, syllabus and resources

4.1.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.

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4.2.Learning tasks

Theory Classes. it will take 2 hours per week till the 30 hours, neccesary to acomplish the objetives of the subject study, will be reached

Laboratory Workshop. it will take 15 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

4.3.Syllabus

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

	Advanced instrumentation.
Topic 1	Data acquisition systems.
Topic 2	Digital signal processing.
Topic 3	Instrumentation software.
Topic 4	Communication protocols instrumentacion.
Topic 5	Smart instrumentaion.

4.4.Course planning and calendar

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
https://eupla.unizar.es/asuntos-academicos/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.

4.5.Bibliography and recommended resources

Material	Format
Topic theory notes Topic presentations	Paper/repository
Topic theory notes Topic presentations Topic problems Related links	Digital/Moodle E-Mail
technical manuals	Papel/repositorio Digital/Moodle
Acquisition system NI USB-6008laboratory	laboratory
Software LabView 2012	laboratory work station
Software Matlab Simulink	laboratory work station