

29846 - Electronic Design

Información del Plan Docente

Academic Year	2016/17
Academic center	326 - Escuela Universitaria Politécnica de Teruel
Degree	444 - Bachelor's Degree in Electronic and Automatic Engineering
ECTS	6.0
Course	4
Period	Half-yearly
Subject Type	Optional
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 process of teaching and learning designed for this subject is based on the following. It will involve three main levels: lectures, practical exercises and laboratory.

- In the lectures, the basic components of the electronic design will be introduced.
- In the sessions of practical exercises, problems and cases will be solved with an active student participation.
- Laboratory sessions will be conducted in small groups, where students will perform circuit simulation and electronic circuits assembly.

A final project to integrate the acquired knowledge will be proposed to be developed by students.

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5.2.Learning activities

The program, offered to the students to achieve the learning goals, includes the following activities:

IN PERSON ACTIVITIES: 2.4 ECTS (60 hours)

1) Face-to-face sessions (T1): 30 hours.

Lectures of theoretical and practical content.

2) Practical exercise lessons (T2): 15 hours.

Practical exercises related to the theoretical contents will be developed.

3) Laboratory sessions (T3): 15 hours.

NOT IN PERSON ACTIVITIES: 3.6 ECTS (90 hours)

4) Study (T7): 82 hours.

Personal work and study of the student of the theoretical content, practical exercise

Performance, preparation of the lab sessions and development of the final project.

5.3.Program

- Circuit simulation.
- PCB technology.
- CAD tools for PCB design.
- Design in the presence of electromagnetic interferences.
- Introduction to the EMC regulations.

5.4.Planning and scheduling

Both theoretical and practical exercises classes and laboratory sessions are held according to the schedule set by the centre (available on the corresponding website).

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Each teacher will inform of the particular tutoring hours.

5.5. Bibliography and recommended resources

1. Subject material. Available in Moodle (To access this resource, the student must be enrolled in the subject).

2. Exercises and practices scripts. Available in Moodle (To access this resource, the student must be enrolled in the subject).

3. Bibliography

- J. González, J. Recasens, Circuitos impresos: Teoría diseño y montaje, Ed. Paraninfo, 1997.

- M. H. Rashid, SPICE for circuits and electronics using PSPICE, Ed. Prentice-Hall, 1990.

- H. Ott, Noise reduction techniques in electronics systems, Ed. Addison-Wesley, second Edition, 1988.

- J. Balcells, F. Daura, R. Esparza, R. Pallás, Interferencias electromagnéticas en sistemas electrónicos, Ed. Marcombo, serie

Mundo Electrónico, 1992

- T. Williams, Control y limitación de energía electromagnética, Ed. Paraninfo, 1997

- P. Clayton, Introduction to Electromagnetic Compatibility, Ed. Addison-Wesley.

- EMC journal: <http://www.compliance-club.com/>. Revista que publica series de artículos sobre EMC.