SUBJECT TEACHING GUIDE

G1009 - Advanced Design of Printed Circuit Boards

Degree in Industrial Electronic Engineering and Automatic Control Systems

Academic year 2023-2024

1. IDENTIFYING DATA

Degree	Degree in Industrial Electronic Engineering and Automatic Control Systems	Type and Year	Optional. Year 4
Faculty	School of Industrial Engineering and Telecommunications		
Discipline	Subject Area: Electronic Technology Optional Module		
Course unit title and code	G1009 - Advanced Design of Printed Circuit Boards		

Number of ECTS credits allocated	6	Term	Semester based (2)
Web			

Language of instruction	Spanish	English Friendly	Yes	Mode of delivery	Face-to-face

Department	DPTO. TECNOLOGIA ELECTRONICA E INGENIERIA DE SISTEMAS Y AUTOMATICA
Name of lecturer	FRANCISCO JAVIER DIAZ RODRIGUEZ
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Other lecturers	ALEJANDRO NAVARRO CRESPIN

3.1 LEARNING OUTCOMES

- Meet modern techniques of PCB design and manufacture.
  PCB regulations and standards.
  Understanding aspects of integrity of the signals simulation, analysis and verification and the basic principles to avoid EMC problems.

4. OBJECTIVES

Achieve learning outcomes

6. COURSE ORGANIZATION

CONTENTS	
1	PCB manufacturing processes
2	Regulations and standard
3	PCB design

7. ASSESSMENT METHODS AND CRITERIA

Description	Type	Final Eval.	Reassessn	%
Continuous and laboratory evaluations	Laboratory evaluation	No	Yes	50,00
Presentation of the final work	Work	Yes	Yes	50,00
TOTAL				100,00

Observations

Continuous assessment during the course.
A complete PCB for an electronic system is evaluated.
In the case that the health criteria make it necessary, the evaluation tests will be carried out following the mixed teaching format: classroom and non-classroom classes. In the most extreme case that students and teachers cannot go to the classroom, the assessment tests will be carried out using telematic tools. In these cases, the content of the tests, being similar to the face-to-face case, would be totally or partially individualized for each student.

Observations for part-time students

When obtaining a 50% evaluation with evaluation activities integrated into the teaching (continuous evaluation and laboratory) the evaluation criteria are the same for all students. Part-time students with incompatibility of schedule receive direct personal attention or by telematic tools on the contents and continuous assessment. The virtual classroom facilitates access to information and continuous assessment tests.

8. BIBLIOGRAPHY AND TEACHING MATERIALS

BASIC

Tema 1:
C.F. Coombs, "Printed circuits handbook", 6º Edición, Edt. McGraw-Hill, 2008

Tema 2:
D. Brooks, "Signal integrity issues and printed circuit board design", Edt. Prentice Hall, 2003
M.I. Montrose, "Printed circuit board design techniques for EMC compliance: a handbook for designers", Edt. IEEE Press Series, 2000.

Tema 3:
K. Mitzner, "Complete PCB design using OrCAD Capture and PCB Editor", Edt. Newnes, 2009
Manuales del programa Cadence/Allegro
Manuales de DesignSpark