

SUBJECT TEACHING GUIDE

G1012 - Design of Electronic Applications

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	G1012 - Design of Electronic Applications				
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				
E-mail	javier.diaz@unican.es				
Office	E.T.S. de Ingenieros Industriales y de Telecomunicación. Planta: - 3. DESPACHO PROFESORES (S3083)				
Other lecturers					

3.1 LEARNING OUTCOMES

- After completing the course, students should achieve the objectives of the course

4. OBJECTIVES

Practical work about multidisciplinary electronic system; from design to documentation, using the knowledge and skills acquired in the degree.

Development of a complete electronic system, integrating analog, digital and power parts, applied to a real application.

Teamwork with oral presentation

6. COURSE ORGANIZATION	
CONTENTS	
1	Introduction
2	Application Development
3	Final results

7. ASSESSMENT METHODS AND CRITERIA				
Description	Type	Final Eval.	Reassessn	%
Continuous assessment tests	Laboratory evaluation	No	Yes	30,00
Oral presentation of the work	Laboratory evaluation	No	Yes	70,00
TOTAL				100,00
Observations				
<p>The assessment is performed continuously tracking the student's work during each class session. After completing the course the students delivered a job and make a presentation of the work developed. The evaluation of this work together with the presentation, provide the final grade of each student. 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.</p>				
Observations for part-time students				
<p>When obtaining a 100% 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.</p>				

8. BIBLIOGRAPHY AND TEACHING MATERIALS
BASIC
J.M. Angulo, B. García, I. Angulo, J. Vicente. Microcontroladores avanzados dsPIC. Controladores Digitales de Señales. Arquitectura, programación y aplicaciones. Thomson. 2006.
R. W. Erickson, D. Maksimovic. Fundamentals of Power Electronics 2nd Ed. Kluwer Academic Publisher, 2001.
A. Barrado, A. Lázaro. Problemas de Electrónica de Potencia. Pearson Prentice Hall. 2007.
Xilinx y Altera. Documentación on-line.
J. Hamblen, T. Hall y M. Furman. Rapid Prototyping of Digital Systems - SoPC Edition, Springer, 2007.