SUBJECT TEACHING GUIDE

G825 - Microprocessors

Degree in Telecommunication Technologies Engineering

Academic year 2023-2024

1. IDENTIFYING DATA					
Degree	Degree in Telecommunication Technologies Engineering			Type and Year	Compulsory. Year 3
Faculty	School of Industrial Engineering and Telecommunications				
Discipline	Subject Area: Microprocessors Compulsory Module				
Course unit title and code	G825 - Microprocessors				
Number of ECTS credits allocated	6	Term		Semester based (1)	
Web	https://moodle.unican.es/course/view.php?id=11936				
Language of instruction	Spanish	English Friendly	No	Mode of delivery	Face-to-face

Department	DPTO. INGENIERÍA INFORMÁTICA Y ELECTRÓNICA
Name of lecturer	MARIA DEL CARMEN MARTINEZ FERNANDEZ
E-mail	carmen.martinez@unican.es
Office	Facultad de Ciencias. Planta: + 1. DESPACHO PROFESOR (1101)
Other lecturers	PABLO FUENTES SAEZ

3.1 LEARNING OUTCOMES
- Ability to evaluate different hardware options for a computer based on its performance
- Ability to understand how the computer hardware executes programs written in any programming language
- Ability to understand all input/output processes of a computer thus choosing the best technique for a given communication process

4. OBJECTIVES

The main objective is to know and understand the basic principles of Computer Engineering, specially those related to Computer Structure. The student must understand how a computer works in a machine level programming language. Also, the student must programm with some ease different algorithms and applications in assembly language . The student should also be able to design and analyze the functioning of the different parts of a simple computer and its I /O system.

6. COURSE ORGANIZATION

CONTENTS	
1	Introduction to Computer Engineering. Compile, link, load, execute. Von Neumann machine.
2	Information in the computer: integers, floats, characters, overflow.
3	ARM processor architecture.
4	Assembly programming.
5	Input / Output: Drivers and programming
6	ARM Microarchitecture.

7. ASSESSMENT METHODS AND CRITERIA

Description	Type	Final Eval.	Reassessn	%
An exam in the laboratory.	Others	No	Yes	50,00
Several exaxams, both theory and practice.	Written exam	No	Yes	50,00
TOTAL				100,00

Observations
Both 'Evaluación laboratorio' and ' Evaluación teórico-práctica' can be repeated in the extraordinary call exam.

Observations for part-time students
Part-time students can choose between following the usual evaluation of the subject or doing a single exam. This must be communicated to the responsible of the course at the beginning of the semester.

8. BIBLIOGRAPHY AND TEACHING MATERIALS

BASIC

Digital design and computer architecture. Sarah L. Harris, David Money Harris. Waltham, Massachusetts : Morgan Kaufmann, cop. 2016. ISBN: 978-0-12-800056-4

Modern assembly language programming with the ARM processor. Larry D. Pyeatt. Kidlington (UK) ; Cambridge (USA) : Newness/Elsevier, cop, 2016. ISBN: 978-0-12-803698-3