

SUBJECT TEACHING GUIDE

G267 - Introduction to Computers

Degree in Computer Systems Engineering

First Degree in Computer Systems Engineering

Academic year 2024-2025

1. IDENTIFYING DATA					
Degree	Degree in Computer Systems Engineering First Degree in Computer Systems Engineering			Type and Year	Core. Year 1 Core. Year 1
Faculty	Faculty of Sciences				
Discipline	Subject Area: Fundamentals of Computer Science Basic Training Module				
Course unit title and code	G267 - Introduction to Computers				
Number of ECTS credits allocated	6	Term	Semester based (2)		
Knowledge Field					
Web	https://moodle.unican.es/				
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				
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Office	Facultad de Ciencias. Planta: + 1. DESPACHO PROFESOR (1101)				
Other lecturers	JESUS GUTIERREZ PRECIADO PABLO FUENTES SAEZ				

4. OBJECTIVES

The main objective is to understand the basic principles of Computer Engineering. Students must understand how a modern computer Works. They must programming with some ease different algorithms and applications in assembly language and make a first analysis of the various functional units of a computer.

1. To understand computers, its functional blocks, machine language and assembly language.
2. To know data and instruction representation in the memory of a present-day computer.
3. To know the correspondence between the different levels of languages : high level, assembly and machine languages.
4. To design algorithms and programs involving functions using assembly language .

6. SUBJECT PROGRAM

CONTENTS

1	Introduction to computer engineering. Compile, link, load and execute. Von Neumann machine. RISC processor.
2	Representation of the information in a computer. - Natural numbers, integers, floats. - Characters - Overflow
3	Architecture of ARM processor - Assembly language - Machine language - Compiling, assembling and loading
4	ARM Assembly programming
5	Modular assembly programming
6	Microarchitecture ARM processor - Performance analysis - Single-cycle datapath and control

7. ASSESSMENT METHODS AND CRITERIA

Description	Type	Final Eval.	Reassessn	%
Exams and workshops.	Others	No	Yes	50,00
Exams along the semester	Written exam	No	Yes	50,00
TOTAL				100,00
Observations				
The califications obtained in the sections 'Evaluación teórico-práctica' and 'Evaluación laboratorio' can be repeated in july.				
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