SUBJECT TEACHING GUIDE

G1002 - Industrial Informatics and Communications

Degree in Industrial Electronic Engineering and Automatic Control Systems

Academic year 2020-2021

1. IDENTIFYING DATA					
Degree	Degree in Industrial Electronic Engineering and Automatic Control Systems			Type and Year	Compulsory. Year 3
Faculty	School of Industrial Engineering and Telecommunications				
Discipline	Subject Area: Automation and Systems Control Module: Specific Technology				
Course unit title and code	G1002 - Industrial Informatics and Communications				
Number of ECTS credits allocated	6	Term		Semester based (1)	
Web	https://moodle.unican.es/				
Language of instruction	Spanish	English Friendly	No	Mode of delivery	Face-to-face

Department	DPTO. MATEMATICA APLICADA Y CIENCIAS DE LA COMPUTACION
Name of lecturer	PEDRO CORCUERA MIRO QUESADA
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Other lecturers	JESUS ANTONIO ARCE HERNANDO ESTHER GONZALEZ SARABIA ELENA HOYOS VILLANUEVA

3.1 LEARNING OUTCOMES

- Ability to programming and manage data structures using a high level language
  Ability to design an information system and industrial control
  Configure and use a communications network for industrial application

4. OBJECTIVES

Acquire programming techniques and management of data structures using high level programming languages.
Knowing the architecture of an information system for industrial application.
Acquire techniques for designing and managing databases.
Knowing standards and protocols of industrial communication networks and field buses.

6. COURSE ORGANIZATION

CONTENTS	
1	Block 1: Programming and data structures Introduction to C language Data Structures in C: static vectors and records. Functions. Data structures: dynamic memory. Files.
2	Block 2: Information systems and databases Advanced programming. Visual programming. Databases.
3	Block 3: industrial communications networks and fieldbuses Digital communication networks. OSI model industrial networks. Standards and protocols. TCP / IP model Fieldbuses.

7. ASSESSMENT METHODS AND CRITERIA

Description	Type	Final Eval.	Reassessn	%
Theory Block 1	Written exam	No	Yes	20,00
Practice Block 1	Work	No	Yes	13,33
Practice Block 2. Portfolio tasks	Laboratory evaluation	No	No	33,33
Theory Block 3	Written exam	Yes	Yes	26,67
Practice Block 3	Laboratory evaluation	No	No	6,67
TOTAL				100,00

Observations

The evaluation corresponds to the average of the marks obtained in each block.

Observations for part-time students

Part time students who do not participate in the continuous assessment process must take a test related to the contents not evaluated.

8. BIBLIOGRAPHY AND TEACHING MATERIALS

BASIC

Programación estructurada en C, J. Antonakos, K. Mansfield, Prentice Hall
Introducción a la programación con C, A. Marzal, I. Gracia, Colección Sapientia Repositorio UJI, (http://repositori.uji.es/xmlui/handle/10234/24306)
C Programming: A Modern Approach, K. N. King, W. W. Norton & Company
Web Programming, Step by Step. M.Stepp, J. Miller, V. Kirst, Ed. Lulu
Fundamentos de bases de datos, Abraham Silberschatz, Henry F. Korth, S. Sudarshan, McGraw-Hill
Comunicaciones industriales: principios básicos, Manuel Castro Gil [et al.], Ed. UNED
Comunicaciones industriales: sistemas distribuidos y aplicaciones , Manuel Castro Gil [et al.], Ed. UNED