

## SUBJECT TEACHING GUIDE

G1002 - Industrial Informatics and Communications

Degree in Industrial Electronic Engineering and Automatic Control Systems

Academic year 2019-2020

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					
Language of instruction	Spanish	English Friendly	No	Mode of delivery	Face-to-face

Department	DPTO. TECNOLOGIA ELECTRONICA E INGENIERIA DE SISTEMAS Y AUTOMATICA				
Name of lecturer	ESTHER GONZALEZ SARABIA				
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Office	E.T.S. de Ingenieros Industriales y de Telecomunicación. Planta: - 2. DESPACHO PROFESOR (S2021)				
Other lecturers	PEDRO CORCUERA MIRO QUESADA JESUS ANTONIO ARCE HERNANDO 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. The minimum average grade to be obtained in blocks 1 and 3 to calculate the overall average of the course is 4 points.				
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