

SUBJECT TEACHING GUIDE

G1492 - Real Time Programming

Degree in Telecommunication Technologies Engineering

Academic year 2021-2022

1. IDENTIFYING DATA					
Degree	Degree in Telecommunication Technologies Engineering			Type and Year	Optional. Year 4
Faculty	School of Industrial Engineering and Telecommunications				
Discipline	Speciality Optional Subjects				
Course unit title and code	G1492 - Real Time Programming				
Number of ECTS credits allocated	6	Term	Semester based (1)		
Web	http://www.istr.unican.es/assignaturas/g1492				
Language of instruction	Spanish	English Friendly	No	Mode of delivery	Face-to-face

Department	DPTO. INGENIERÍA INFORMÁTICA Y ELECTRÓNICA				
Name of lecturer	JULIO LUIS MEDINA PASAJE				
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Other lecturers					

3.1 LEARNING OUTCOMES	
- Enables for the design and development of applications that control and monitor the physical system in which the computer is embedded, such as communications nodes, robotic systems or industrial systems.	
- Enables for the design and development of applications that control and monitor the physical system in which the computer is embedded, such as communications nodes, robotic systems or industrial systems.	
- Ability to analyze and configure the schedulability of applications with hard and soft real-time requirements.	

4. OBJECTIVES

Ability to specify and design applications which are concurrent and driven by events.

Ability to program applications for monitoring and control of physical environments that have their own temporal dynamics.

To know strategies of interchange of events and data between a computer and the hardware environment with which it is connected.

Knowing how to model, analyze and configure concurrent applications to meet the time requirements that they have specified.

6. COURSE ORGANIZATION

CONTENTS

1	Basis of concurrent programming
2	Real-time aspects in a programming language.
3	Input/output management strategies
4	Real-time modeling and schedulability analysis
5	Integrated pilot project of the subject

7. ASSESSMENT METHODS AND CRITERIA

Description	Type	Final Eval.	Reassessn	%
Evaluation of the practical programming assignments.	Activity evaluation with Virtual Media	Yes	Yes	50,00
Evaluation of the theory related contents	Others	Yes	Yes	50,00
TOTAL				100,00
Observations				
In the event that another health alert due to the COVID-19 pandemic makes impossible to do the evaluation of the practical assignments and theory examinations face-to-face, means would be put in place to do the evaluation through telematic means.				
Observations for part-time students				
The evaluation is flexible enough so that the subject can be followed by part-time students.				

8. BIBLIOGRAPHY AND TEACHING MATERIALS

BASIC

A. Welling: "Concurrent and Real-Time Programming in Java" Wiley, 2004

A. Burn y A. Welling: " Real-Time Systems and Programming Languages: Ada, Real-Time Java and C/Real-Time POSIX" Addison Wesley, 2009.