

SUBJECT TEACHING GUIDE

G1478 - High Performance Heterogeneous Electronic Systems for Multimedia Applications Degree in Telecommunication Technologies Engineering

Academic year 2019-2020

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	G1478 - High Performance Heterogeneous Electronic Systems for Multimedia Applications				
Number of ECTS credits allocated	6	Term	Semester based (1)		
Web	http://moodle.unican.es/course/view.php?id=1303				
Language of instruction	Spanish	English Friendly	Yes	Mode of delivery	Face-to-face

Department	DPTO. TECNOLOGIA ELECTRONICA E INGENIERIA DE SISTEMAS Y AUTOMATICA				
Name of lecturer	PABLO PEDRO SANCHEZ ESPESO				
E-mail	pablo.sanchez@unican.es				
Office	E.T.S. de Ingenieros Industriales y de Telecomunicación. Planta: - 3. DESPACHO PROFESOR (S3002)				
Other lecturers	JESUS MIGUEL PEREZ LLANO				

3.1 LEARNING OUTCOMES

- Participants will learn and know how to use heterogeneous electronic systems. Electronic systems that integrate multiple processing elements : multi-processor systems (many-core , multi-core) and systems using different types of processing elements (GPCPU and GPU).

- Development of audio and video multimedia applications

4. OBJECTIVES

Obtain practical experience with heterogeneous electronic systems
Know how to program heterogeneous systems with OpenMP and OpenCL
To develop multimedia applications

6. COURSE ORGANIZATION

CONTENTS

1	Module 1. Electronic systems for multimedia applications
2	Module 1: Implementation of multimedia applications in multi-processor systems
3	Module 3. Many-core platforms for multimedia-applications
4	Module 4. Hardware acceleration

7. ASSESSMENT METHODS AND CRITERIA

Description	Type	Final Eval.	Reassessn	%
Multimedia application development	Work	Yes	Yes	50,00
Continuous evaluation	Work	No	No	20,00
Laboratory exercises	Work	No	No	30,00
TOTAL				100,00
Observations				
Observations for part-time students				

8. BIBLIOGRAPHY AND TEACHING MATERIALS

BASIC

- A. Vajda, "Programming Many-Core Chips", Springer, 2011
 Azad, "Computer Vision: Principles and Practices".Elektron, 2008.