

Teaching guide

IDENTIFICATION DETAILS

Degree:	Computer Engineering		
Field of Knowledge:	Engineering and Architecture		
Faculty/School:	Senior Polytechnic School		
Course:	ADVANCED COMPUTER ARCHITECTURE		
Type:	Optional	ECTS credits:	6
Year:	4	Code:	3627
Teaching period:	Eighth semester		
Area:	Computer Engineering		
Module:	Specific Technology		
Teaching type:	Classroom-based		
Language:	Spanish		
Total number of student study hours:	150		

SUBJECT DESCRIPTION

This subject furthers that learned in Computer Architecture and Organisation in terms of information system performance and optimisation techniques that may be used with current systems to improve their performance. Processors for specific purposes will also be covered, and their fields of application.

In the first instance, it broadens and deepens our understanding of the techniques that can be applied to processor performance measurement which allow us to set the quantitative principles necessary to focus the study of the other aspects covered in the course.

Thereafter, the memory hierarchy and the impact that different organisations of the memory system have on the system's performance are more thoroughly studied.

Subsequently, superscalar and VLIW processors, vectorial processors and multiprocessor systems are covered in detail.

Finally, specific purpose processors and embedded processors are introduced: their basic characteristics and

application domains, as well as real-time systems.

SKILLS

Basic Skills

Students must have demonstrated knowledge and understanding in an area of study that is founded on general secondary education. Moreover, the area of study is typically at a level that includes certain aspects implying knowledge at the forefront of its field of study, albeit supported by advanced textbooks

Students must be able to apply their knowledge to their work or vocation in a professional manner and possess skills that can typically be demonstrated by coming up with and sustaining arguments and solving problems within their field of study

Students must have the ability to gather and interpret relevant data (usually within their field of study) in order to make judgments that include reflections on pertinent social, scientific or ethical issues

Students must be able to convey information, ideas, problems and solutions to both an expert and non-expert audience

Students must have developed the learning skills needed to undertake further study with a high degree of independence

General Skills

An ability to conceive, draft, organise, plan, develop and execute projects in the field of computer engineering whose purpose is to conceive, develop or exploit computer applications, services and systems.

An ability to define, assess and choose hardware and software platforms for the development and execution of computer applications, services and systems.

An ability to conceive, develop and maintain computer applications, services and systems using software engineering methods as an instrument to ensure quality.

An ability to conceive and develop computer systems or architectures that are centralised or distributed, integrating hardware, software and networks.

Specific skills

An ability to develop specific processors and embedded systems, and to develop and optimise the software of said systems.

An ability to analyse, assess and choose the most suitable hardware and software platforms for supporting embedded and real-time applications.

DISTRIBUTION OF WORK TIME

CLASSROOM-BASED ACTIVITY	INDEPENDENT STUDY/OUT-OF-CLASSROOM ACTIVITY
68 hours	82 hours