Course Unit Description - (PODIS)

(Digital Signal Processing)

(Mestrado em Engenharia Electrotécnica e de Computadores)

Academic year: 2008/2009

Subject group: Electrónica e Telecomunicações

	Semestral	**Compulsory**		
Mode of study	Diurno	**Hours/Week**	**T-**Teórica	2
Year	1º		**PL-**Prática-Laboratorial	2
Semester	2º		**OT-**Orientação Tutorial	1

ECTS 6

Objectives

After the course end the students should be able to use the modern tools and toolboxes for digital signal processing and to achieve the required skills to design signal processing systems, based on signal processing processors-DSP.

Course Contents

1. Discrete signal and systems

2. Continuous signals sampling

3. Fourier discrete transform and fast Fourier transform FFT algorithm

4. Digital filters design techniques

5. Finite and infinite impulse response filters

6. Linear systems response

7. The digital signal processor – DSP

Recommended reading

[1] Digital Signal Processing: A System Design Approach, David J. DeFatta, Joseph G. Lucas, William S. Hodgkiss, John Wiley & Sons, 1988.
[2] Oppenheim

[3] Processamento Digital de Sinais, Manuel Duarte Ortigueira, Fundação Calouste Gulbenkian.

Teaching Methods

The theoretical classes are of the expositive type

The practical classes are based on solving a set of exercises that cover all the lectured subjects

The laboratorial classes consists on the design of a specified digital filter. Initially by simulation and after on a real digital signal

Assessment methods

The final grade is calculated using a weighted average of the following evaluation elements:

Evaluation during the course 30%

A final exam weighting 70%, equally divided by two tests, one at the middle of the course and the other at its end.

	Name
Teacher responsible:	Rui Pedro Bandeira Guedes de Azevedo (RGA)
Lecturer:	Rui Pedro Bandeira Guedes de Azevedo (RGA) Maria Isabel de Castro Lopes Martins Pinto Ferreira (MIS) Verissimo Manuel Brandão Lima Santos (VMS)