Course guide
230256 - RTDSP - Real-Time Digital Signal Processing

Last modified: 06/05/2019

Unit in charge: Barcelona School of Telecommunications Engineering
Teaching unit: 739 - TSC - Department of Signal Theory and Communications.

Degree: **Academic year:** 2019 **ECTS Credits:** 6.0
Languages: Spanish

LECTURER

Coordinating lecturer: Rodriguez Fonollosa, Jose Adrian

Others: Rodriguez Fonollosa, Jose Adrian
Valle Alarcon, Rafael

PRIOR SKILLS

Signals and Systems
Digital Signal Processing

REQUIREMENTS

C Programming Language

TEACHING METHODOLOGY

LEARNING OBJECTIVES OF THE SUBJECT

To enable students to develop real time digital signal processing applications using tools similar to those employed in the development of commercial products. Applications cover real time speech processing and basic digital communication subsystems.

STUDY LOAD

Type	Hours	Percentage
Self study	98,0	65.33
Hours small group	26,0	17.33
Hours large group	26,0	17.33

Total learning time: 150 h

CONTENTS

1. Introduction to the working environment: Texas Instruments TMS320C6713 DSK

Description:
Introduction to the integrated development environment for real time digital signal processing applications.

Full-or-part-time: 10h
Laboratory classes: 10h

2. Basic signal processing applications

Description:
Development of basic signal processing applications

Full-or-part-time: 20h
Laboratory classes: 20h

3. Signal processing applications

Description:
Development of signal processing applications in communications, audio and speech.

Full-or-part-time: 30h
Laboratory classes: 30h

GRADING SYSTEM

Continuous evaluation based on
- Preparatory assigments, practical reports and classroom perfromance: 50%
- Individual tests: 50%

BIBLIOGRAPHY

Basic:
- Chassaing, R. Digital signal processing and applications with the TMS320C6713 and TMS320C6416 DSK [on line]. 2nd ed. Hoboken, NJ: John Wiley & Sons, 2008 [Consultation: 01/04/2020]. Available on: https://ebookcentral.proquest.com/lib/upcatalunya-ebooks/detail.action?docID=362017. ISBN 9780470138663.

Complementary:
- Embree, P.M. C algorithms for real-time DSP. Englewood Cliffs: Prentice Hall, 1995. ISBN 0133373533.
- Texas Instruments Incorporated. Texas Instruments [on line]. Dallas, Texas, 1995-2014 [Consultation: 15/12/2011]. Available on: http://www.ti.com.

RESOURCES

Other resources: