

230256 - RTDSP - Real-Time Digital Signal Processing

Coordinating unit: 230 - ETSETB - Barcelona School of Telecommunications Engineering
 Teaching unit: 739 - TSC - Department of Signal Theory and Communications
 Academic year: 2019
 Degree: BACHELOR'S DEGREE IN TELECOMMUNICATIONS TECHNOLOGIES AND SERVICES ENGINEERING (Syllabus 2015). (Teaching unit Optional)
 BACHELOR'S DEGREE IN AUDIOVISUAL SYSTEMS ENGINEERING (Syllabus 2009). (Teaching unit Optional)
 BACHELOR'S DEGREE IN TELECOMMUNICATIONS SCIENCE AND TECHNOLOGY (Syllabus 2010). (Teaching unit Optional)
 BACHELOR'S DEGREE IN TELECOMMUNICATIONS SYSTEMS ENGINEERING (Syllabus 2010). (Teaching unit Optional)
 ECTS credits: 6 Teaching languages: Spanish

Teaching staff

Coordinator: Rodriguez Fonollosa, Jose Adrian
 Others: Rodriguez Fonollosa, Jose Adrian
 Valle Alarcon, Rafael

Prior skills

Signals and Systems
 Digital Signal Processing

Requirements

C Programming Language

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

Total learning time: 150h	Hours large group:	26h	17.33%
	Hours small group:	26h	17.33%
	Self study:	98h	65.33%

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Content

1. Introduction to the working environment: Texas Instruments TMS320C6713 DSK	Learning time: 10h Laboratory classes: 10h
Description: Introduction to the integrated development environment for real time digital signal processing applications.	
2. Basic signal processing applications	Learning time: 20h Laboratory classes: 20h
Description: Development of basic signal processing applications	
3. Signal processing applications	Learning time: 30h Laboratory classes: 30h
Description: Development of signal processing applications in communications, audio and speech.	

Qualification system

Continuous evaluation based on

- Preparatory assignments, practical reports and classroom performance: 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: 29/01/2015]. Available on: <<http://site.ebrary.com/lib/upcatalunya/docDetail.action?docID=10296329>>. ISBN 9780470138663.

Complementary:

Texas Instruments Incorporated. Texas Instruments [on line]. Dallas, Texas, 1995-2014 [Consultation: 15/12/2011]. Available on: <<http://www.ti.com>>.

Embree, P.M. C algorithms for real-time DSP. Englewood Cliffs: Prentice Hall, 1995. ISBN 0133373533.

Others resources: