2010-11 academic year

Speech Processing (21610)

Degree/study: Bachelor's degree in Audiovisual Systems Engineering
Year: 2nd
Term: 3rd
Number of ECTS credits: 4 credits
Hours of studi dedication: 100 hours
Teaching language or languages: Catalan / Spanish / English
Teaching Staff: Emilia Gómez (coordinator), Martí Umbert

1. Presentation of the subject

This is an intermediate subject of digital processing of sound signals, designed for students of Audiovisual Systems Engineering.
The subject is built on the fundamentals of previous degree subjects, basically Acoustic Engineering and Signals and Systems (second year in Audiovisual Systems Engineering).
We will focus on the study of the main techniques of analysis, description, synthesis and processing of voice signals

2. Competences to be attained

Competences to work in the subject according to what is indicated in the syllabus of the bachelor's degree.

Transferable skills	Specific competences
Instrumental 1. Capacity to analyze and summarize. 2. Capacity to organize and plan. 3. Capacity to solve problems. 4. Information research and management skill. 5. Capacity to communicate orally in an academic context and in a written way in Catalan, Spanish and English. Interpersonal 6. Capacity to work in teams. 7. Capacity to work in international and interdisciplinary contexts. Systemic 8. Capacity to include knowledge and methodologies in practice. 9. Concern about quality.	1. Understand and know how to use the adequate mathematic concepts to represent signals and digital systems. 2. Understand physiological, acoustic and perceptual mechanisms that take part in the generation and perception of voice and speech. 3. Know how to use digital filters and spectral processing techniques to model and process voice signals. 4. Understand the main concepts and techniques in the context of audio signal coding, specially voice signals. 5. Understand the main concepts and techniques of speech recognition. 6. Know how to use current software and, at the same time, design and implement algorithms for voice signals processing.

Transferable skills*:* competences that are required in any degree (oral and written communication, analytic and systemic thought, problems resolution, creativity and so on). They are classified in:
- Instrumental: they include cognitive, methodological, technologic and linguistic skills (for instance: capacity to organize and plan, capacity to communicate properly in a oral and written