

Audio Engineering

Academic Year: (2023 / 2024)

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Department assigned to the subject: Signal and Communications Theory Department

Coordinating teacher: AZPICUETA RUIZ, LUIS ANTONIO

Type: Electives ECTS Credits : 3.0

Year : Semester :

REQUIREMENTS (SUBJECTS THAT ARE ASSUMED TO BE KNOWN)

Digital audio processing for telecommunications

OBJECTIVES

The students will be able to work out audio engineering projects concerning facilities devoted to audio production and recoding, as well as to analyze and design audio facilities for both fixed and mobile scenarios. The students will acquire knowledge of the systems and techniques for audio transmission through fixed and mobile communication networks, security systems, and digital audio right management.

DESCRIPTION OF CONTENTS: PROGRAMME

- Audio equipment synchronization. Audio and video synchronization. Auxiliary elements.
- Audio engineering projects: sound reinforcement and main audio equipment in sport facilities, cinematographic facilities, professional PA systems, live shows, and recording studios.
- Audio transmission through fixed and mobile communication networks; audio in mobile devices. Audio broadcast security: protection and copy detection systems; digital audio right management systems.

LEARNING ACTIVITIES AND METHODOLOGY

THEORETICAL CLASSES

The theoretical class will be given in the blackboard, with slides or by any other means to illustrate the concepts of the lectures.

In these sessions the student will acquire the basic concepts of the course. It is important to highlight that these classes require the initiative and the personal and group involvement of the students (there will be concepts and particular cases that the students themselves should develop). (PO a, g)

GROUP PROJECTS

Several practical projects will be proposed in order that the students work in groups to develop and apply the concepts learnt in theoretical classes. These projects will deal with real situations in which the knowledge acquired along several different courses should be used. (PO a, c, d, e, g)

LABORATORY EXERCISES (1 ECTS)

Basic concepts learnt during the course will be applied in the laboratory.

The lab exercises will be carried out using the lab equipment (acoustic instrumentation and audio equipment) and simulation and design software. (PO g, k)

ASSESSMENT SYSTEM

% end-of-term-examination/test: 50

% of continuous assessment (assignments, laboratory, practicals...): 50

The final grade will be a weighted sum of partial grades coming from: a final written exam (PO a, g), group exercises (PO a, c, e) (a written report, which should make clear each student's contribution (g, d), and an oral presentation (g)), (PO d, g), and lab exercises reports (PO g, k).