30331 - Audio and Video Electronic Systems

Información del Plan Docente

Academic Year	2017/18
Faculty / School	110 - Escuela de Ingeniería y Arquitectura
Degree	438 - Bachelor's Degree in Telecomunications Technology and Services Engineering
ECTS	6.0
Year	4
Semester	First semester
Subject Type	
Module	---

1.General information

1.1.Introduction

1.2.Recommendations to take this course

1.3.Context and importance of this course in the degree

1.4.Activities and key dates

2.Learning goals

2.1.Learning goals

2.2.Importance of learning goals

3.Aims of the course and competences

3.1.Aims of the course

3.2.Competences

4.Assessment (1st and 2nd call)

4.1.Assessment tasks (description of tasks, marking system and assessment criteria)

5.Methodology, learning tasks, syllabus and resources

5.1.Methodological overview

The learning process that is designed for this subject is based on the following:

Class work: 2.4 ECTS (60 hours)
1. Participatory Lectures (45 hours)
2. Laboratory practices (15 hours)

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Personal work: 3.6 ECTS (90 hours)
3. Performing practical work and supervised
4. Study
5. Personal attention
6. Evaluation tests.

5.2.Learning tasks

The learning process that is designed for this subject is based on the following:

Class work: 2.4 ECTS (60 hours)
1. Participatory Lectures (45 hours) in which the theoretical foundations of the contents of the subject are presented and where student participation is encouraged. The presentation of bibliographic material previously delivered to the student (or deposited in the computer means provided by the University for this purpose) and its development on the board for proper follow-up will be combined.
2. Laboratory practices (15 hours) in which students will perform 5 sessions of practices 3 hours in labs Ada Byron Building. In small groups, a training series related to the contents of the subject and to consolidate the set of theoretical concepts are made. This activity will be conducted in the laboratory in person.
Personal work: 3.6 ECTS (90 hours)
3. Performing a practical work and tutored by teachers, based on the contents of the subject and related technologies and audiovisual systems. Possibility of attending seminars related to the topic mentioned with the participation of external guests to them.
4. Study

5. Personalized attention to students through tutorials.
6. Evaluation tests

5.3.Syllabus

The program that the student is offered to help you achieve the expected results includes the following activities.

PART I.
Introduction
History of Digital Audio
Audio equipment
Speakers and microphones
Fundamentals of Digital Audio
AD and DA conversion
Magnetic and optical media: CD, MD, DCC, DAT, DVD
Perceptual Coding
Audio communication protocols
PART II.
Introduction to Video
Color representation
Fundamentals of video systems
Camcorders
Monitors & Displays
Video Recorders
Professionals
Domestic and semi-professional
Video post-production systems

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PROGRAMMING LABORATORY PRACTICE AND SEMINARS
Throughout the course a number of practices will be conducted in order to verify in the laboratory the concepts of the subject. The possibility of a seminar held.

Practice 1. Audacity - Overview
Practice 2. Audacity - recording and editing podcasts
Practice 3. Online Music Mixer - Soundstation Studio
Practice 4. Pure Data
Practice 5. Pure Data and GEM
Practice 6. Audiovisual installations

5.4.Course planning and calendar

Schedule sessions and presentation of works

The schedule of the course, both of the sessions in the classroom and the laboratory sessions, will be determined by the academic calendar that the center established for the corresponding course.

5.5.Bibliography and recommended resources

- Ken C. Pohlmann, Principios de audio digital; 4ª ed. McGraw-Hill, 2002
- John Watkinson, Audio digital, Paraninfo, 1996
- John Watkinson, El arte del audio digital, Instituto Oficial de Radio y Televisión, 2002
- Luc Baert [et al.], Digital audio and compact disc technology, 3rd ed, Focal, 1995
- R.A. Penfold, MIDI avanzado : Guía del usuario, Ed. ra-ma, 1992
- Charles Poynton, Digital Video and HD. Algorithms and Interfaces. Elsevier, 2012.
- J. Whitaker & B.K. Benson, Standard Handbook of Video and Television Engineering, 4th ed. McGraw-Hill Professional; 2003.
- David Austerberry, The Technology of Video and Audio Streaming; 2nd. Ed, Focal Press, 2005
- A. F. Inglis & A. Luther, Video Engineering; 2nd. Ed. McGraw-Hill, 1996
- M. Weise y D. Weynand. How Video Works. From analog to High Definition, Focal Press, 2007
- K. Jack , Video demystified-A Handbook for the Digital Engineer, 3th Edition. LLH Technology Publishing, 2001