

30336 - Audiovisual Communications

Información del Plan Docente

Academic Year	2016/17
Academic center	110 - Escuela de Ingeniería y Arquitectura
Degree	438 - Bachelor's Degree in Telecommunications Technology and Services Engineering
ECTS	6.0
Course	
Period	Second semester
Subject Type	
Module	---

1.Basic info

1.1.Recommendations to take this course

1.2.Activities and key dates for the course

2.Initiation

2.1.Learning outcomes that define the subject

2.2.Introduction

3.Context and competences

3.1.Goals

3.2.Context and meaning of the subject in the degree

3.3.Competences

3.4.Importance of learning outcomes

4.Evaluation

5.Activities and resources

5.1.General methodological presentation

Audiovisual Communication provides with the knowledge and methodologies needed to build, operate and manage audiovisual systems both traditional as television or new multimedia systems via the Internet. The course focuses both on the analysis, coding and processing of audiovisual signals and the capture, transport and presentation of multimedia information. The teaching methodology is based on lectures, practical sessions, visits, seminars and team work.

5.2.Learning activities

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The learning process is based on the following activities:

* Lectures (40 hours) where the teacher present the main contents of the subject to the students. This activity will take place in the classroom in person.

* Seminars and visits (10 hours) in which professional of the audiovisual sector will present practical cases to the students.

* Laboratory work (10 hours) which is divided in 5 sessions of 2 hours.

* Project work, where student teams must work in a particular project. Student must study the state of the art of the techniques to be used on the project and they must write a technical report with the activities and results of the project. Any project related with the audiovisual world is suitable to be accepted.

* Tutorial. Personalized attention to students with the aim of reviewing and discussing the materials and topics presented in both theoretical and practical classes.

* Summative assessment and Examination.

5.3.Program

1. Basic elements of audiovisual communication

1.1. The human audiovisual system: vision, hearing

1.2. From the scene to the video signal

1.3. Speech and audio signals

1.4. Audio and Video Digitization

2. Audiovisual information compression

2.1. Image Compression

2.2. Video Compression

2.3. Speech and audio compression

3. Standards for audiovisual signals Coding

3.1. Speech: DPCM, ADPCM, LPC, CELP

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3.2. Audio: MPEG

3.3. Image: JPEG2000

3.4. Video: H26X, MPEG2, MPEG4, MPEG7

4. Audiovisual transmission systems

4.1. Digital Audio Broadcasting (DAB)

4.2. Digital Video Broadcasting (DVB)

4.3. Internet Protocol Television (IPTV)

5.4.Planning and scheduling

The schedule of the course, both lectures and laboratory sessions, will be determined by the academic calendar that the center established for the corresponding academic year. Latest information could be find in the virtual teaching platform "Moodle".

5.5.Bibliography and recomended resources

- Wang, Y. Video processing and Communications / Y. Wang, J. Östermann, Y.-Q. Zhang Prentice Hall, 2001.
- Delgado Cañizares, Manuel. Sistemas de radio y televisión / Manuel Delgado Cañizares Madrid [etc.] : Paraninfo, D.L. 2001
- Tarrés Ruiz, F.. Sistemas audiovisuales 1 - Televisión analógica y digital / F. Tarrés Ruiz Ediciones UPC, 2000.
- Pareja Carrascal, E. Tecnología actual de televisión / E. Pareja Carrascal Ed. IORTV, 2005
- Martín Marcos, Alfonso. Sistemas de televisión / Alfonso Martín Marcos Madrid : Ciencia 3, D.L. 1996
- Martín Marcos, Alfonso. TV digital. Vol. I, Compresión MPEG / Alfonso Martín Marcos Madrid : Ciencia 3, D.L.2006