

<b>Program</b>	<b>09TT- Engineering in Telecommunication Technologies and Services</b>
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<b>Course number and name</b>	
<b>Number</b>	95000072
<b>Name</b>	Audiovisual Equipment and Systems Equipos y Sistemas Audiovisuales
<b>Semester</b>	Y4 - S7

<b>Credits and contact hours</b>	
<b>ECTS Credits</b>	6
<b>Contact hours</b>	60

<b>Coordinator's name</b>	Francisco Javier Casajús Quirós
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<b>Specific course information</b>		
<b>Description of course content</b>		
Elective subject included in the Audio-Visual speciality. Its contents are focused on the technical aspects of audiovisual equipment for professional use. A strong foundation on perception is provided, as well as the detailed description of the equipment and systems used for acquisition, transmission and display of audio and video signals. The course also includes several laboratory sessions, intended as to provide hands-on experience with actual audiovisual equipment and studios.		
<b>List of topics to be covered</b>		
<ol style="list-style-type: none"> <li>1. Perception: hearing and sight. The audiovisual signals: audio and video.</li> <li>2. Signal acquisition and transduction: microphones and cameras</li> <li>3. Signal reproduction: loudspeakers and video displays.</li> <li>4. Interfacing: analog and digital</li> <li>5. Signal processing: coding, enhancement and effects.</li> </ol>		
<b>Prerequisites or co-requisites</b>		
It is recommended to have attended the following courses: Signal and Systems, Digital Signal Processing and Digital Communications		
<b>Course category in the program</b>		
__ R (required)	_X_ E (elective)	__ SE (selective elective)

<b>Specific goals for the course</b>
<b>Specific outcomes of instruction</b>
RA1: Acquiring the basic knowledge needed to build, exploit and manage applications and services related to capture, analogue and digital processing, display, storage, reproduction of audio-visual services and multimedia information.
RA2: Acquiring the basic knowledge needed to evaluate, specify, build and maintain

systems, equipment and premises devoted to audio, video and television.  
 RA3: Acquiring the basic knowledge needed to build projects and premises devoted to production and management of audio-visual signals.  
 RA4: Acquiring the basic knowledge needed to build projects dealing with analysis and characterization of rooms and spaces for audio-visual production.  
 RA5: Acquiring the basic knowledge needed to build, manage and distribute multimedia content, according to usability and accessibility criteria applied to audio-visual and interactive services.

**Student outcomes addressed by the course**

CE-SI1, CE-SI2, CE-SI3, CE-SI4 and CE-SI5

**Bibliography and supplemental materials**

J. M. Menéndez y J. Casajús, "Tecnologías de audio y vídeo", Dto. Publicaciones E.T.S.I.T., 2006.  
 Ken C. Pohlmann, "Principles of Digital Audio", McGraw-Hill 2011  
 Keith Jack, "Video Demystified", Newnes, Elsevier 2007  
 J. Owens y G. Millerson, "Television Production", Focal Press, 15th Edition, 2013.  
 Course website <http://moodle.upm.es/titulaciones/oficiales>  
 Signal Laboratory. Room A.202-L  
 Classroom as provided by the center  
 Group workroom: Laboratory A.202-L

**Teaching methodology**

<b>X_ lectures</b>	<b>X_ problem solving sessions</b>	<b>__ collaborative actions</b>	<b>X_ laboratory sessions</b>
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**Other:**