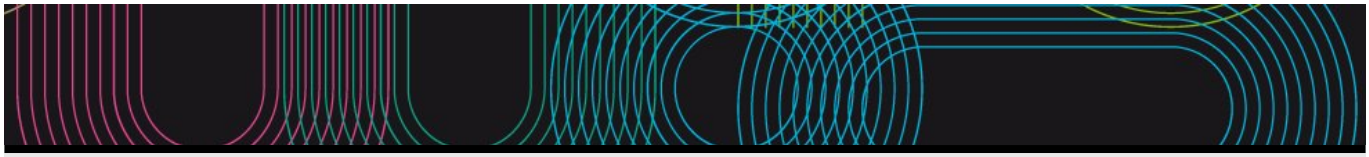

IDENTIFYING DATA				
Design of audiovisual installations				
Subject	Design of audiovisual installations			
Code	V05G301V01334			
Study programme	Grado en Ingeniería de Tecnologías de Telecomunicación			
Descriptors	ECTS Credits	Choose	Year	Quadmester
	6	Optional	3rd	2nd
Teaching language	#EnglishFriendly Spanish Galician			
Department				
Coordinator	Torres Guijarro, María Soledad			
Lecturers	Martín Rodríguez, Fernando Torres Guijarro, María Soledad			
E-mail	soledadtorres@uvigo.es			
Web	http://moovi.uvigo.gal			
General description	In this subject the student will learn to design audiovisual systems,with respect to sound take and sound reinforcement, image take and visual coating, synchronisation, wiring, connections and supply. Indoor and outdoor applications of audiovisual networks, as well as distinct multimedia platforms, will be analysed. English Friendly curse: International students may request from the teachers: a) materials and bibliographic references in English, b) tutoring sessions in English, c) exams and assessments in English.			

Training and Learning Results	
Code	
B1	CG1: The ability to write, develop and sign projects in the field of Telecommunication Engineering, according to the knowledge acquired as considered in section 5 of this Law, the conception and development or operation of networks, services and applications of Telecommunication and Electronics.
B6	CG6: The aptitude to manage mandatory specifications, procedures and laws.
B9	CG9: The ability to work in multidisciplinary groups in a Multilanguage environment and to communicate, in writing and orally, knowledge, procedures, results and ideas related with Telecommunications and Electronics.
B12	CG12 The development of discussion ability about technical subjects
C35	CE35/SI2 The ability to analyze, specify, carry out and maintain systems, equipments, heads and installations of TV, audio and video for mobile and fixed environments.
C36	CE36/SI3 The capacity to implement projects at places and installations for the production and recording of audio and video signals.
C37	CE37/SI4 The ability to carry out acoustic engineering projects related to: acoustical isolation and conditioning of rooms, loudspeaker installations, specification, analysis and selection of electro acoustical transducers, measurement, analysis and control of radio vibration systems, environmental acoustics, submarine and acoustical systems.
C38	CE38/SI5 The ability to create, modify, manage, broadcast and distribute multimedia contents taking into account the use and accessibility criteria to audiovisual, broadcasting and interactive services.
D4	CT4 Encourage cooperative work, and skills like communication, organization, planning and acceptance of responsibility in a multilingual and multidisciplinary work environment, which promotes education for equality, peace and respect for fundamental rights.

Expected results from this subject		Training and Learning Results
Knowing the different types of existing amplifiers from a systemic and usage point of view, knowing how to interpret the technical specifications in order to be able to evaluate them	B6	C35
Selecting a sound pick-up configuration to be applied in different situations		C35 C36 C37

Explain interconnection elements and protocols to prepare the transport and synchronisation of audio signals	B6	C35	
Analyse lens systems		C35 C36	
Choose the most appropriate image capture and presentation systems		C35 C36	
Design an image capture and visual overlay system given an enclosure, comparing different subsystems and elements	B1 B6	C35 C36	
Design a system of sound take and sound reinforcement given a certain enclosure, comparing different subsystems and elements.	B1 B6	C36 C37	
Create atmospheres addressing acoustic and visual appearances		C35 C36	
Design the wiring and connections of an audiovisual network for his control and supply	B1 B6	C35 C36 C37 C38	
Analyse different indoor and outdoor applications of Audiovisual Networks.		C35 C36 C38	
Organize a working group to carry out a project, including the following: * technical ability to collect information, interpret technical specifications of equipment, discuss different options and select a combination of certain equipment. * use of theoretical calculations and simulation software tools to support the design of sound systems and visual coating. * conduction of meetings, discussion of partial results and oral presentation of a definitive work in front of a demanding audience. * writing of progress reports, minutes of meetings and a final technical report. * adaptation to new environments, management of internal roles in the group and conflict resolution.	B6 B9 B12		D4

Contents

Topic	
Sound reinforcement (electro-acoustic aspects)	Technical specifications in audio. Take. Amplification. Dimensioning and distribution. Sound field calculation exercises and computer simulation of the sound field
Visual overlay	Cameras, image sensors and lenses (exercises). Capture parameters, exposure, focus, depth of field. Field of view calculation Indoor and outdoor imaging technologies. Working with 3D modelling and scenario recreation applications.
Control systems, wiring and power supply	Design of cabling and wiring of an audio-visual network and its power supply. Synchronisation of audio and video signals in an audiovisual network. Control systems. Power supply.
Audiovisual networks	Indoor and outdoor applications.

Planning

	Class hours	Hours outside the classroom	Total hours
Practices through ICT	12	0	12
Project based learning	7	57	64
Lecturing	21	42	63
Problem and/or exercise solving	1	0	1
Report of practices, practicum and external practices	0	9	9
Objective questions exam	1	0	1

*The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.

Methodologies

	Description
Practices through ICT	Use and adjustment of analysis tools and algorithms, identifying which one should be used in each situation. Software to be used: EASE Focus 3, Blender With this methodology they work the CE36 and CE37 competences, individually or in couples.

Project based learning	Collaborative work in reduced groups on a complex design that applies several topics covered in the subject. The work is periodically followed-up and it fosters working in group, role sharing, information sharing, planning and public defending of results. With this methodology they work the CG1, CG6, CG9, CG12, CE35, CE36, CE37, CE38 and CT4 competences.
Lecturing	Presentation by the teacher of the contents of the subject, fostering the critical discussion of the concepts. The theoretical grounds of algorithms and procedures used to resolve problems are given. With this methodology they work the CG1, CG6, CG12, CE35, CE36, CE37, and CE38 competences.

Personalized assistance

Methodologies	Description
Lecturing	Doubts can be solved in the rests of the classes and in the teacher tutorial sesions. These tutorial sessions will be done individually or in short groups (with a maximum of 2-3 students). The tutorial sessions are typically agreed with the professor. The meetng requests can be done personally or by email.
Practices through ICT	In the classes of practices is a good moment to consult doubts with the professor. The professor moves between the tables and some students take advantage of the proximity of the professor to consult doubts of the own class or punctual doubts of other classes.
Project based learning	The projects have its own classes of C group in which the students of each team consult their doubts about the project and the professor is with them helping to define the project and giving them support for the development of their particular project. They are classes with a very pleasant interaction.

Assessment

	Description	Qualification	Training and Learning Results		
Project based learning	Assessment of a project, developed through the four-month period, including the preparation and public presentation of a report. The corresponding individual mark to the works done in group is obtained as a ponderated sum of: 1) the common mark of the group (60%); 2) the individual mark (40%), obtained from one or various of the following methods of evaluation: cross-evaluation by the other members of the group, oral questions during the presentations of the works, written questions about the content of the work.	40	B1 B6 B9 B12	C35 C36 C37 C38	D4
Problem and/or exercise solving	Written evaluation tests, with brief questions and problems.	40	B1 B6 B12	C35 C36 C37 C38	
Report of practices, practicum and external practices	Assessment of a written inform that describes the work of several weeks in the computer classroom.	10		C36 C37	
Objective questions exam	Tests	10	B1 B6 B12	C35 C36 C37 C38	

Other comments on the Evaluation

Following the guidelines of the degree, two systems of evaluation are offered: continuous assessment (recommended) and global assessment. Global assessment will be only allowed in situations in which it is imposible to follow the recommended system.

In case of detection of plagiarism in any of the tests (short tests, reports of the laboratory practices, reports of the directed works or final exam), the final grade will be of FAIL (0) and the fact will be communicated to the Centre Management for the opportune effects.

ORDINARY EXAM

A) CONTINUOUS ASSESSMENT:

The continuous assessment will be based on the evaluation of practical task, projects and a test. Once a student has signed a document of agreement with the process of continuous assessment, and if not communicated otherwise within one month, it will be understood that the student has submitted to the call, and the final degree will be obtained by the application of the criteria described bellow, regardless of whether or not the final exam is taken.

The subject is assessed in a 0 to 10 points scale and is considered "passed" if each activity is graded equal or greater than 4, and the final grade obtained is equal or greater than 5. The final grade with be obtained from the weighted sum of the grade obtained in the following tasks with the given weights. If in any of the activities the grade does not reach 4 but the average exceeds 5, the final grade will be 4.9.

Types and weights of the activities:

1. Tutored works: 40 % of the final grade. Two reports will be delivered: the first during Halfway through the term and the second at the end. The individualized part of the assessment will be done through cross-evaluation, oral questions during presentations, and written exam questions.
2. Reports of practical tasks (Weight: 10 %).
3. Written evaluation tests: there will be two tests, each with a weighting of 20% of the final mark, one in the middle and one at the end of the term. Several short tests will also be undertaken, with a global weighting of 10%.

A grade of 4 points will be required for an activity to be considered passed. Failed activities can be made up on tje date of the final exam.

B) GLOBAL ASSESSMENT

A final examination is available for those students that for some reason could not follow the continuous evaluation assessment process. In this case the final examination will consist in a written test, and some additional questions related with the practical tasks and projects. The subject is assessed in a 0 to 10 points scale and it is considered "passed" if the final grade obtained is equal or greater than 5.

EXTRAORDINARY EXAM:

There is a scheduled date for a second call examination, for those students that either dropped out during the semester or failed. Prior the examination, a student can choose to follow the continuous assessment or the exam-only assessment. In the former selection, the grades obtained in the projects and practical tasks will be taken into account and the student will only answer to the written test. If the later, (exam-only assessment), the student will also have to answer a full examination as described before.

END-OF-PROGRAM EXAM:

The exam will consist of a written test. This final exam will be rated between 0 and 10 points. It includes all the topics of the course. To pass, at least five points are needed. No other activity is valued.

Sources of information

Basic Bibliography

John Eargle, **JBL Sound system design reference manual**, 3, JBL, 1999

Complementary Bibliography

John Eargle, Chris Foreman, **Audio Engineering for Sound Reinforcement**, Hal Leonard, 2002

Gary Davis and Ralph Jones, **Sound Reinforcement Handbook**, Hal Leonard, 1989

Philip Giddings, **Audio Systems Design and Installation**, Focal Press, 1990

Hilary Wyatt y Tim Amyes, **Postproducción de Audio para TV y Cine**, Escuela de Cine y Video de Andoain, 2005

Rüdiger Ganslandt, Harald Hofmann, **Handbook of Lighting Design**,

José Luis Sánchez Bote, **Sistemas de refuerzo sonoro**, Universidad Politécnica de Madrid, 2013

José María Mellado, **Fotografía de alta calidad: las técnicas y métodos definitivos.**, CS6. Anaya multimedia, 2013

Ben Simonds, **Blender master class : a hands-on guide to modeling, sculpting, materials, and rendering**, No Starch Press, 2013

Recommendations

Subjects that are recommended to be taken simultaneously

Room Acoustics/V05G301V01330
Imaging Systems/V05G301V01332

Subjects that it is recommended to have taken before

Fundamentals of Sound and Image/V05G301V01209
Fundamentals of Acoustics Engineering/V05G301V01327
Interactive Audio Systems/V05G301V01331
Video and Television/V05G301V01329