60925 - Signal processing for communications

Información del Plan Docente

Academic Year	2016/17
Academic center	110 - Escuela de Ingeniería y Arquitectura
Degree	533 - Master's Degree in Telecommunications Engineering
ECTS	5.0
Course	1
Period	First semester
Subject Type	Compulsory
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

The learning process is based on the following methodology:

M1. Lectures.

M4: Miniprojects.

M8: Practical classes.

M9: Laboratory work.

M10: Tutoring.

M11: Evaluation.

5.2.Learning activities

A01. Lectures (38 hours). The teacher presents the theory and students participate actively. This activity will take place in the classroom. This methodology, is designed to provide students with the theoretical foundations of the subject and requires individual home work from the student.

A02: Practical classes (8 hours). The students solve problems to consolidate the theoretical concepts from the lectures. This activity will be conducted at the classroom.

A03. Lab work (4 hours). There will be 2 sessions of 2 hours in the Signals and Systems Laboratory L2.02 (Ada Byron building). The students are provided with a series of problems to solve, which include the main blocks of a digital communication system, to consolidate the theoretical concepts from the lectures.

A05: Miniprojects (22 hours). The students develop an implementation of the theory concepts of the course using a simulation environment provided by the teacher. Then they write a report and make an oral presentation.

A06: Tutoring. The teacher answers questions to the students in the office with the aim of reviewing and discussing the materials and topics presented both theoretical and practical.

A08: Evaluation. The evaluation is done using the lab reports, project work and written tests described in the evaluation section.

5.3.Program

Course topics:

1. Review of Wiener filtering and adaptive filtering. Adaptive equalization

2. Multichannel adaptive processing. Array Processing.

3. MIMO Systems ("Multiple Input Multiple Output"). Fundamentals and Applications.

4. Signal processing in multimedia communications systems.

5.4.Planning and scheduling

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The timetable of the course, contact hours, and laboratory sessions will be defined by the center in the academic calendar of the corresponding course.

5.5.Bibliography and recomended resources