30157 - Linear Systems

Información del Plan Docente

Academic Year 2017/18
Faculty / School 179 - Centro Universitario de la Defensa - Zaragoza
Degree 457 - Bachelor's Degree in Industrial Organisational Engineering
563 - Bachelor's Degree in Industrial Organisational Engineering
ECTS 6.0
Year 4
Semester First semester
Subject Type Optional
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 methodology followed for the teaching-learning process is mainly based on masterclasses exposing the main theoretical concepts of each topic. These theoretical concepts will be complemented by problem sessions that apply those concepts on realistics scenarios. In all the cases, active participation of the students will be promoted planning and solving topics proposed in class.
5.2. Learning tasks

Learning activities are mainly the study of the learning material given in the classes, the realization of the practical exercises provided for each topic and the realization of the evaluating exercises given periodically.

5.3. Syllabus

El programa de la asignatura incluye los siguientes temas:

1. INTRODUCTION TO SIGNALS AND SYSTEMS: Basic operations with signals, energy and power concepts, system classification
2. SPECTRAL ANALYSIS: Fourier series analysis for periodic signals, Fourier Transform and its properties, energy and power spectral densities, bandwidth
3. LINEAR AND TIME INVARIANT SYSTEMS: Convolution, properties of linear and time invariant systems
4. SIGNAL TRANSMISSION: Transfer function, amplitude and phase functions. Filtering

5.4. Course planning and calendar

5.5. Bibliography and recommended resources