DEGREE CURRICULUM

SIGNALS AND SYSTEMS

Coordination: Francisco Claria Sancho

Academic year 2014-15

SIGNALS AND SYSTEMS 2014-15

Subject's general information

Subject name	Signals and Systems
Code	102121
Semester	1r Q Avaluació Continuada
Typology	Obligatòria
ECTS credits	6
Theoretical credits	0
Practical credits	0
Coordination	Francisco Claria Sancho
Office and hour of attention	by agreement
Department	Informàtica i Enginyeria Industrial
Teaching load distribution between lectures and independent student work	(40%) 60 h classroom (60%) 90 h autonomous work
Modality	Presencial
Important information on data processing	Consult this link for more information.
Language	Castellano
Degree	Degree in Automation and Industrial Electronic Engineering
Office and hour of attention	by agreement
E-mail addresses	claria@diei.udl.cat

SIGNALS AND SYSTEMS 2014-15

Francisco Claria Sancho

Subject's extra information

This subject is imparted during the first semester of third year.

The concepts that brings this subject, in general, are often new to the student and assimilate them requires significant dedication and study time. These concepts are basic to understand subjects such as modeling and control systems, content that will be in other subjects.

Learning objectives

The goal is to provide students with ability to analyze, simulate and design systems in which input signals are processed or cause these systems to respond interacting with the physical environment. This is to familiarize students with some of the tools and / or basic methodologies of signal processing such as spectral analysis, convolution and correlation, signal sampling, filtering, and an introduction to analog and pulse modulation.

Competences

Degree-specific competences

- Applied knowledge of electronic instrumentation.
- Knowledge of the principles and applications of analogical electronics

  Objectives

  - - Signal processing an analogical system study

- Applied knowledge of high-power electronics.
- Knowledge of the principles and applications of digital electronics and microprocessors.

  Objectives

  - -Computer simulation of an analogical system.

Degree-transversal competences

- Ability to resolve problems and elaborate and defend arguments inside their field of study.

  Objectives

  - - Distinguish and choices in a system, the possibility of processing time or processing in frequency. - Relate the expressions in time and frequency of these systems. - Review and develop systems block diagrams of modulators and demodulators. - Estimate the viability of these diagrams by calculating expressions of the signals involved in these blocks

- Ability to analyse and synthesize.

  Objectives

  - - Understand the concept of convolution of two signals and their extent in analysis, design and systems simulation. - Understand the spectral meaning of the Fourier Transform and its reach in

signal processing. - Relate correlation and convolution. - Understand the relationship between sampling time and spectrum of a signal

Subject contents

Methodology

Master class

Problem-based learning

Classroom Practices

Development plan

Develops sequentially contents

Evaluation

Evaluation Method

During the semester, there shall be four assessments in the form of two written tests and two papers that account for the study and the work done in the labs. These documents will have a maximum score of 1 point each and not considered any improvement threshold. The two written tests will be held on dates determined by the EPS for this purpose.

In this course, by its nature, has little sense to evaluate parts of avoiding your stuff previous contents. Thus, each written test will be on all the stuff that has been given so far.

The first written test will have a maximum score of 3 points and be considered approved if the score is greater than or equal to 1.5 points. The second written test will have a maximum score of 5 points and will be considered approved if the score is greater than or equal to 2.5 points.

As the material is cumulative in each written test, if the second test is passed, then the first test will be compensated if the latter has not been surpassed, with half its maximum score (1.5 points).

> -The total score is the sum of the notes of the 4 reviews. **(This is the first of the two possible pathways of qualifications that are contemplated)**.
>
> -If the second written test you get a lower score to 2.5 points, you must use the recovery activity, to be performed on the date set by the EPS. The written test will have a valuation recovery maximum 8 points and be deemed to have been passed if you get a note added to the laboratory practice notes and document preparation practices study is greater than or equal to 5 points. (**This is the second pathway**)

In addition:

Any person enrolled in this course, that have made the 2nd written test whether or not it has been overcome, be furnished to the recovery activity to increase the final grade. If the 2nd test had been overcome the final grade will never be lower than it would have obtained by the first approach.

Bibliography

REFERENCES

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A. Bruce Carlson.

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