EQ1210 Introduction to Signal Theory 4.5 credits

Introduktion till signalteori

This is a translation of the Swedish, legally binding, course syllabus.

Establishment

Course syllabus for EQ1210 valid from Autumn 2007

Grading scale

A, B, C, D, E, FX, F

Education cycle

First cycle

Main field of study

Technology, Electrical Engineering

Specific prerequisites

Language of instruction

The language of instruction is specified in the course offering information in the course catalogue.

Intended learning outcomes

To give students fundamental knowledge of discrete-time stochastic processes and practical attainments in linear filtering of stochastic processes. The course also covers linear estimation and signal models.

Course contents

Basic properties of discrete-time stochastic processes, particularly weak stationary processes. Definitions, distribution functions, density functions, mean value, mean power, variance, ergodicity, autocorrelation function and power spectral density. Gaussian processes and white noise, linear filtering of stochastic processes, linear prediction, AR, MA and ARMA processes, spectral estimation, Wiener filters.

Course literature

"Statistical Digital Signal Processing and Modeling" by Monson Hayes.

Examination

- PRO2 - Project 2, 1.0 credits, grading scale: P, F
- PRO1 - Project 1, 1.0 credits, grading scale: P, F
- TENA - Examination, 2.5 credits, grading scale: A, B, C, D, E, FX, F

Based on recommendation from KTH's coordinator for disabilities, the examiner will decide how to adapt an examination for students with documented disability.

The examiner may apply another examination format when re-examining individual students.

If the course is discontinued, students may request to be examined during the following two academic years.

Other requirements for final grade

Written examination, (TEN1; 3 credits).
Two home-work exercises.

Ethical approach

- All members of a group are responsible for the group's work.
- In any assessment, every student shall honestly disclose any help received and sources used.
- In an oral assessment, every student shall be able to present and answer questions about the entire assignment and solution.