



HE1011 Control Systems 7.5 credits

Reglersystem

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

Establishment

Course syllabus for HE1011 valid from Autumn 2019

Grading scale

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

Education cycle

First cycle

Main field of study

Electrical Engineering, Technology

Specific prerequisites

Completed Course: ML1000 or equivalent

Language of instruction

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

Intended learning outcomes

Course contents

- Applying linear differential equations on processes involving mechanics, electronics, thermodynamics and hydraulics.
- Laplace transforms and transfer functions.
- P, PI, PD and PID controllers
- Properties of analogue systems.
- Frequency analysis
- Simulation
- Dimensioning of analogue controllers
- Discrete-time controlling systems
- Z-transforms and transfer functions
- Pole placement controller
- Properties of discrete-time systems
- Dimensioning of discrete-time controllers
- Basic fuzzy control

Examination

- TEN1 - Written examination, 6.0 credits, grading scale: A, B, C, D, E, FX, F
- LAB1 - Laboratory Work, 1.5 credits, grading scale: P, 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.

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.