



# EL1110 Automatic Control, General Course 6.0 credits

Reglerteknik, allmän kurs

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

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

## Establishment

Course syllabus for EL1110 valid from Autumn 2007

## Grading scale

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

## Education cycle

First cycle

## Main field of study

Electrical Engineering, Technology

## Specific prerequisites

## Language of instruction

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

## Intended learning outcomes

The course may be regarded as introductory. It provides students with the basic engineering knowledge of dynamic systems and feedback.

## Course contents

Fundamental concepts and problem areas. Representation of dynamic systems: Differential equation models. Transfer functions. Analysis of feedback control systems: Stability. Root-locus. Nyquist and Bode diagrams. Accuracy. Speed of response. Robustness and sensitivity. Synthesis of simple control systems: Specifications. PID-controllers. Lead-lag compensation. State space models. State feedback. Pole placement. Observers. Digitally implemented controllers.

## Course literature

Glad T. and Ljung, L Reglerteknik - Grundläggande teori. Studentlitteratur, 1989.

## Examination

- LAB1 - Laboratory Work, 0.5 credits, grading scale: P, F
- LAB2 - Laboratory Work, 0.5 credits, grading scale: P, F
- LAB3 - Laboratory Work, 1.0 credits, grading scale: P, F
- TEN1 - Examination, 4.0 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.

## Other requirements for final grade

TEN 4 cr, LAB1 0.5 cr, LAB2 0.5 cr, LAB3 1 cr

## 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.