II1331 Applied Automation Control 6.0 credits

Tillämpad reglerteknik

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

Establishment

Course syllabus for II1331 valid from Autumn 2008

Grading scale

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

Education cycle

First cycle

Main field of study

Electrical Engineering, Technology

Specific prerequisites

Basic knowledge in mathematics, programming, and electronic circuits fundamentals.

Language of instruction

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

Intended learning outcomes

After completion of the course the student should be able to

- make models of dynamic systems.
- change and improve dynamic systems with different types of controllers.

Course contents

The course will describe problems with servo systems and control systems. Dynamic systems will be analyzed in regard to time response, accuracy and stability in both time and frequency domain.

Simulation of systems with modern calculation and simulation programs.

Transfer functions and block diagrams. Nyquist plot and Bode plot. Compensation links (PID) to improve control systems. Design of dynamic system control. Analog and digital controllers.

Course literature

Modern Reglerteknik, Thomas, Bertil
Upplaga: 3 Förlag: LIBER År: 1992
ISBN: 91-47-05085-3

Modern Reglerteknik Övningsbok, Thomas, Bertil
Upplaga: 3 Förlag: LIBER År: 1992
ISBN: 91-47-05103-5

Examination

- ÖVN1 - Exercises, 1.5 credits, grading scale: P, F
- TEN1 - Examination, 3.0 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.

Other requirements for final grade

Approved lab work, 1.5 hp (LAB1)
Approved exercises, 1.5 hp (ÖVN1)
Passed written exam, 3.0 hp. (TEN1)

Grading scale: A/B/C/D/E/Fx/F

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.