EL2820 Modelling of Dynamical Systems 7.5 credits

Modellering av dynamiska system

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 EL2820 valid from Autumn 2022

Grading scale

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

Education cycle

Second cycle

Main field of study

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

After passing the course, the student should be able to

- formulate basic theory and definitions of important concepts in mathematical modelling of dynamic systems
- retrieve mathematical models for engineering systems based on fundamental physical relations and based on measurement data.

Course contents

- model types
- overview of different physical domains (physics, mechanics, electronics)
- model simplification, differential-algebraic equations
- systematic modelling methods
- object-oriented modelling
- disturbances and disturbance models
- parameter estimation and statistical properties

Examination

- LAB2 - Lab 2, 0.5 credits, grading scale: P, F
- LAB3 - Lab 3, 2.0 credits, grading scale: P, F
- LABA - Lab 1, 2.0 credits, grading scale: P, F
- TENA - Written exam, 3.0 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.

Transitional regulations

The expired modules LAB1 and TEN1 can be examined until Autumn 24.

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.