



MF2043 Robust Mechatronics

6.0 credits

Robust mekatronik

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

The official course syllabus is valid from the fall semester 2024 in accordance with the decision by the Head of the ITM School: M-2023-2062. Date of decision: 2023-10-13

Grading scale

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

Education cycle

Second cycle

Main field of study

Mechanical Engineering

Specific prerequisites

A Bachelor of Science, subject area mechanical engineering or an equivalent discipline.

Has passed the course MF1016 Electrical engineering or equivalent knowledge in electrical engineering.

Has passed the course DD1320 Applied computer science/DD1321 Applied programming and computer science or equivalent knowledge in programming technique.

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:

1. Design electronic systems that are robust with regard to function, environmental impact and electromagnetic compatibility
2. Design and produce electronic subsystems such as power supply, drives, filters and current sensors
3. Adapt properties of analogue and digital electric signals so that they in a robust way can interact with digital electronics for example in the form of a microcontroller
4. Design and produce mechatronic systems containing inter alia connected electronic subsystems similar to the above-mentioned

Course contents

The course is about design of robust mechatronic systems with a clear emphasis on how the electronic hardware is appropriately designed.

The labs can contain both experimental studies and simulations, in order to give the opportunity to create both broad and deep understanding of the function of the involved electronics.

Examination

- LAB2 - Laboratory work, 4.0 credits, grading scale: P, F
- TEN2 - Written examination, 2.0 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.

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.