



MF2071 Research Methodology in Mechatronics 4.5 credits

Forskningsmetodik i 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

On 04/21/2020, the Dean of the ITM School has decided to establish this official course syllabus to apply from spring term 2020 (registration number M-2020-0792).

Grading scale

P, F

Education cycle

Second cycle

Main field of study

Mechanical Engineering

Specific prerequisites

Completed Bachelor's degree in Mechanical Engineering.

Language of instruction

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

Intended learning outcomes

On completion of the course, the student should be able to:

- Summarise and at a general level discuss important challenges and trends in the area of mechatronics and embedded control systems.
- Discuss and evaluate different scientific research methods.
- Evaluate, discuss and argue around research ethics.
- Plan and carry out a scientific study.
- Write a scientific report in within a specific field, related to mechatronics and embedded control systems.
- Review, plan and justify an approach for a scientific study defined by another student.

Course contents

The course gives an increased and deepened knowledge in contemporary scientific and industrial development trends within the fields mechatronics and embedded control systems. Scientific methods are studied and to be able to work with both research ethics and research methodology, the fields are treated both at a general level and for the specific research specialisation of mechatronics and embedded control systems. Scientific planning and writing is included.

Furthermore, the course includes preparations for the second-cycle Degree Project, regarding literature studies, methodology and report writing.

Examination

- KON1 - Partial exam, - credits, grading scale: P, F
- KON2 - Written exam, - credits, grading scale: P, F
- KON3 - Partial exam, - credits, grading scale: P, F
- KON4 - Written exam, - credits, grading scale: P, F
- TEN1 - Written exam, 4.5 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.

Attendance at all elements of the course is mandatory and a pre-requisite for the examination, but the examiner can replace a missed element with an equivalent exercise.

Four optional quizzes are organised during the course. Their results may be counted for the examination.

- If passing at least three of the four quizzes (KON1, KON2, KON3 and KON4) means that an oral examination can be carried out.
- Passed on two or fewer quizzes (KON1, KON2, KON3 and KON4) imply that a written examination must be carried out.

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.