



# MF2058 Mechatronics, Advanced Course Spring Semester

## 9.0 credits

Mekatronik, högre kurs vårterminen

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 MF2058 valid from Spring 2019

### Grading scale

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

### Education cycle

Second cycle

### Main field of study

Mechanical Engineering

### Specific prerequisites

Approved of at least 50% of the courses MF2030 Mechatronics basic Course, MF2095 Programming in C for Embedded Systems, MF2043 Robust Mechatronics and MF2007 Dynamics and Motion control or equivalent courses.

## Language of instruction

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

## Intended learning outcomes

The student should after the course be able to:

- apply knowledge and skills from earlier courses, as well as learn to acquire new ones on demand.
- identify, compare and critically assess aspects of an engineering problem, towards making design decisions.
- describe, compare and critically examine various product development processes.
- work through all aspects of an engineering development process from requirements engineering to verification and validation.
- apply and evaluate support methods in complex product development.
- design and develop prototypes.
- use professional tools necessary for the development of mechatronics products.
- get organised, lead and become part of a cross technical and complex development project.

## Course contents

This course forms the first and preparatory component of a major development project that is continued in project course MF2059.

The course first consists of a set of seminars and workshops on topics of relevance when working on complex mechatronics development projects, in a relatively large development team.

The seminars serie is followed by a small scale development project in which the knowledge gained from the seminars, as well as technical competence from previous courses, is applied.

It is anticipated that the student will then scale up its work on the same development project in the MF2059 course.

In the learning environment, team formation, teamwork and industrial collaboration are an integrated part. The student teams work in collaboration with industrial representatives to determine the specific factors that govern product requirements, design and realization. This involves considering the needs and wishes of stakeholders, system requirements, component requirements, validation, verification and testing.

## Course literature

All course material and literature will be available online.

## Examination

- PRO6 - Project, 3.0 credits, grading scale: A, B, C, D, E, FX, F
- PRO3 - Project, 1.5 credits, grading scale: P, F
- PRO5 - Project, 1.5 credits, grading scale: P, F
- TEN1 - 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.

## 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.