



MF2003 Mechatronics, Advanced Course 18.0 credits

Mekatronik, högre kurs

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

Establishment

Course syllabus for MF2003 valid from Spring 2011

Grading scale

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

Education cycle

Second cycle

Main field of study

Specific prerequisites

Civilingenjör: Qualified for studies in grade 4,
MF106X/MF107X/MF109X/MF1022/4F1822, MF2007/4F1907, DD1321/2D1321

Masterprogram Engineering Design, track Mechatronics: MF2030, MF2042

Language of instruction

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

Intended learning outcomes

Complex embedded mechatronic systems and products use microelectronics and software as an integrated part of the mechanical design. Apart from function and performance, the design is of most importance for an innovative product for success on a global market. The Mechatronics advance course focus on the early part of product development; conceive, design and realization phases.

The student should after the course:

- be able to show deep knowledge about the principles of mechatronics systems architecture and functions
- be able to compare and critically assess aspects on engineering problems that possibly needs a complex mechatronic product as part of the solution
- be able to define models and exercise computer simulations in the area of mechatronics, even for ill defined problems
- apply knowledge and skills in the development of mechatronic systems in an international team environment.
- be able to communicate and defend mechatronic design solutions in both oral and written dialogs
- be able to describe and be familiar with local and global companies with importance for the Mechatronic sector.

Course contents

The course is aligned with real product development project. Design methodology topics include structured methodology and design knowledge.

Team formation and team work is an integrated part of the problem based learning environment.

The students are introduced to the tools, methods and thinking strategies needed to form and manage creative design engineering projects.

The student teams work in collaboration with industry with real problems to determine the specific factors that govern product requirements, design and realization. They focus on product-needs, design requirements, performance requirements and test-validation protocols.

The student teams produce detailed reports and supporting working physical prototypes.

Disposition

Start in P4 ends in P2 next semester

Course literature

Ingen fast kursbok. Kursmaterial, artiklar mm. tillgängliggörs bl.a. som .pdf filer på vår kursplattform.

Examination

- PRO2 - Project 2, 9.0 credits, grading scale: P, F
- PRO1 - Project 1, 9.0 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.

PRO1 - Project 1, 3.0 credits P4

PRO2 - Project 2, 7,5 credits P1+P2

PRO3 - Project 3, 7,5 credits P1+P2

Other requirements for final grade

Mandatory participation in course activities, Project task and assignments approved, written exams

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.