



MF1045 Product realization - Engineering Design 6.0 credits

Produktframtagning - Konstruktion

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

Establishment

Course syllabus for MF1045 valid from Autumn 2019

Grading scale

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

Education cycle

First cycle

Main field of study

Technology

Specific prerequisites

In order to be eligible to read the course, the student must have passed at least one of the examination parts in the course MF1044 Machine Components.

Language of instruction

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

Intended learning outcomes

After completing the course, students will:

- be able to describe the activities of the engineering design process and how they depend on each other
- have completed a team-based engineering design project
- be able to switch between different levels of abstraction, such as a function, solution in principle and detailed solution, during the different stages of the design process
- have conducted a simplified life cycle analysis to evaluate a product's environmental impact

Course contents

This course addresses the engineering design process by integrating the skills previously acquired on machine components, put them in an engineering design context, and methodically applies them in an engineering design project.

Disposition

The emphasis in this course is not on studying a list of topics, but rather it is a project course. Students work in teams on a project, integrating skills acquired in earlier courses. The course is mainly an extension of the courses MF1044 Machine Components and MG1026 Manufacturing Technology, but also requires basic knowledge in mechanics, solid mechanics, programming mathematical modes of physical system, and Computer Aided Design (CAD).

Some topics covered in the lectures include planning and managing engineering design projects, working in teams, basic design principles in mechanical engineering, materials selection and life cycle assessment (LCA). Depending upon the project, other topics may be included. Oral and written reports are required.

Course literature

Literature from the courses MF1044 Machine Components and MG1026 Manufacturing Technology

Examination

- PRO2 - Project, 4.5 credits, grading scale: A, B, C, D, E, FX, F
- INL2 - Hand in Tasks, 1.5 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.

If the course is discontinued, students may request to be examined during the following two academic years.

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.