



MF2077 Machine Design Advanced Course Part II 12.0 credits

Maskinkonstruktion högre kurs del II

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

Establishment

Course syllabus for MF2077 valid from Autumn 2017

Grading scale

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

Education cycle

Second cycle

Main field of study

Mechanical Engineering

Specific prerequisites

A Bachelor's degree in Mechanical Engineering or equivalent.

The course MF2076 Machine Design Advanced Course Part I or equivalent.

The course MF2018 Tribology or equivalent.

The course MF2024 Robust and Probabilistic Design or equivalent.

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 students should be able to;

- plan and participate in development of integrated and modular products
- design and detail both components and subsystems of complex mechanical products from concepts to manufacturing documentation and prototype
- apply model-based product development in simulation and verification of product concepts during the detail design phase
- design and analyse both components and subsystems of complex products in an engineering way
- generate loads for both components and complex mechanical units, e.g. for design of components and structures, material selections, choice of standard parts
- apply principles of ecofriendly design during the detail design phase
- apply previously acquired knowledge in e.g. mechanics, solid mechanics, electrical engineering, product development and industrial design
- apply basic criteria for constructive design, including load application, manufacturing adaptation etc.
- choose material and manufacturing process in an engineering way

Course contents

The focus of the course is on the detail design phase of the product development process, where we start from a concept that is further developed into a function prototype or full scale prototype. A large part of the course is project-based, where a model of the design process is used for planning and follow-up of the work.

Disposition

Lessons (10 x 2 h): Lessons with a focus on e.g. detail design, modelling and simulation for verification of product requirements, manufacturing adaptation and materials selection.

Seminars (4 x 8 h): With a focus on selected parts of the course content.

Home assignments.

Project Work (scheduled supervision 12x6 h).

Examination

- PRO2 - Project, 3.0 credits, grading scale: P, F
- INL1 - Assignment, 3.0 credits, grading scale: P, F
- PRO1 - Project, 6.0 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.

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.