



MF2054 Modell-Based Design, Adaption Course 3.0 credits

Modellbaserad produktutveckling, adaptionskurs

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

Establishment

Course syllabus for MF2054 valid from Autumn 2012

Grading scale

P, F

Education cycle

Second cycle

Main field of study

Mechanical Engineering

Specific prerequisites

A Bachelor in Mechanical Engineering.

Language of instruction

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

Intended learning outcomes

A student that has completed the course shall:

- be able to elaborate on the business motives for using CAD- and CAE-in technical development and engineering;
- be able to use MATLAB to make simple programs that solves the basic mathematical and engineering problems.
- be able to use SolidEdge to make CAD-models of mechanical parts and assemblies, and to do some basic design evaluations with the model.
- be able to use Ansys to set up and solve static, dynamic, and thermal engineering problems with the finite element method.
- have performed integrated CAD- and FEM-modelling.
- have set up an MBS model, performed a dynamic simulation and analysed the simulation results.

Course contents

The main goal is that the students with a Bachelor degree from other than the KTH CDEPR, CMAST, or CFATE five year programs shall get the basic required skills in operating the most important computer tools used in the mandatory master level courses in the Machine design master track.

Disposition

- Lectures (4 x 2 hours): Lectures on model-based design, numerical modelling with Matlab, CAD modelling with SolidEdge, finite element modeling with Ansys, and MBS modelling with Adams.
- Exercises (8 x 2 hours): Practical exercises on topics introduced at a preceeding lecture. Each exercise is performed individually and the results must be documented and approved.
- Self-study exercises (non-scheduled).
- Individual assignment work (non-scheduled).

Course literature

Publiserat kursmaterial på KTH Social och Bilda.

Hand-outs on KTH Social and Bilda.

Examination

- PRO1 - Project, 3.0 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.

Other requirements for final grade

A pass grade requires that all exercises and individual assignments are approved.

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.