



MF1046 Design and Product Realization, Introduction 10.5 credits

Design och produktframtagning, introduktion

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

Establishment

Course syllabus for MF1046 valid from Autumn 2011

Grading scale

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

Education cycle

First cycle

Main field of study

Technology

Specific prerequisites

Secondary Skills or equivalent required for admission to the program design and product development.

"Mandatory for Year 1, can not be read by other students"

Language of instruction

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

Intended learning outcomes

After the course, the student should

- a) have knowledge of design and product development process and methodology and the engineer's role in this.
- b) know the historical background of industrial design and the importance of industrial design in the product development process.
- c) be able to use methods for increasing creativity and knowledge of group dynamic exercises.
- d) be able to use some of the engineer's computer tools, specifically:
 - MATLAB to make simple program that solves the basic mathematical and engineering problems.
 - CAD for making 3D models for pictorial communication and base for production.
 - MS Word for writing reports with figures and graphs.
- e) be able to visualize concepts of products by simple sketches and models.
- f) have experience of working in both small and large groups with formal project meetings and tasks.
- g) understand the structural setup of a technical report and have training in language and content in a technical report.
- h) be able to prepare and conduct an oral presentation.

Course contents

The main part of the course consists of two projects. The first project aims to design a new or improve an existing product.. Aspects of form, function och manufacturing must be considered. The proposals shall then be illustrated with physical and virtual models (eg pasteboard and 3D CAD). The project starts with a kick-off and exercises in project work, group dynamics and creativity.

In the next project, a device or system is analysed in terms of form, function, manufacturing and process of product development. The project starts with investigating of information and a company visit.

These projects are supported with tutorials, exercises and laboratory work. The teacher-led operations includes the following topics: CAD, MATLAB, Design, and Communication.

Disposition

Examination is ongoing through oral and written presentations of projects and assignments. For some parts mandatory attendance is demanded.

Course literature

Folkeson, A., Kommunikation för ingenjörer, Maskinkonstruktion, KTH, 2003

Course material in Matlab, CAD, Workmethology, Scetching och Modelling Material

Examination

- PRO2 - Project, 4.5 credits, grading scale: A, B, C, D, E, FX, F
- INL1 - Hand in Task, 1.5 credits, grading scale: A, B, C, D, E, FX, F
- PRO1 - Project, 1.5 credits, grading scale: A, B, C, D, E, FX, F
- INL2 - Hand in Task, 1.5 credits, grading scale: A, B, C, D, E, FX, F
- INL3 - Hand in Task, 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.

INL1 - Assignment CAD, 1.5 credits, grades: A, B, C, D, E, FX, F

INL2 - Assignment MATLAB, 1.5 credits, grades: A, B, C, D, E, FX, F

INL3 - Assignments Design, 1,5 credits, grades: P / F

PRO1 - Project Analysis, 1,5 credits, grades: A, B, C, D, E, FX, F
PRO2 - Synthesis Project, 4.5 credits, grades: A, B, C, D, E, FX, F

Other requirements for final grade

The final grade for the course is obtained by weighing the performance of the above.

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.