MF2076 Machine Design Advanced Course Part I 9.0 credits

Maskinkonstruktion högre kurs del I

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

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

Establishment

Course syllabus for MF2076 valid from Spring 2016

Grading scale

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

Education cycle

Second cycle

Main field of study

Mechanical Engineering

Specific prerequisites

Admitted to TIPUM, track Machine Design (IPUB)

Language of instruction

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

Intended learning outcomes

On completion of the course, the student should be able to;

- plan and participate in development of integrated and modular products.
- apply model-based product development at modelling and simulation of product concepts during early design phases.
- apply principles of ecofriendly design during early design phases
- 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
- use "rapid prototyping" methods to create early simple prototypes of chosen concepts

Course contents

The focus of the course is on the early phases of the product development process- from idea to a chosen concept and a first version of a prototype with the aid of "rapid prototyping". 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. In the course, we will introduce and apply; model-based product development, manufacturing technology, ecofriendly design and "rapid prototyping" within the framework of the project assignments.

Disposition

Lessons (10 x 2 h): Lessons that deal with project planning, design methodology, specifications, model-based product development, manufacturing methods, ecofriendly design, "rapid prototyping".

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

Home assignments.

Project Work (scheduled supervision 12x6 h).

Course literature

1 ”Machine Elements in Mechanical Design” by Robert L. Mott

2 Utdelat material under kursens gång

Examination

- INL1 - Assignment, 3.0 credits, grading scale: P, F
- PRO1 - Project, 3.0 credits, grading scale: P, F
- TEN1 - Written Examination, 3.0 credits, grading scale: A, B, C, D, E, FX, 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.

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.