ML1204 Machine Components 6.0 credits

Maskinkomponenter

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 ML1204 valid from Autumn 2012

Grading scale

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

Education cycle

First cycle

Main field of study

Technology

Specific prerequisites

Basic knowledge within Engineering Mathematics ML1000, Strength of Materials ML1201, Engineering Materials and Production ML1200, and Mechanics ML1101.

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:

- identify and describe the purpose and function of commonly used machine components
- based on a problem choose suitable machine components with respect to its function
- use catalogs and standards for design of machine components with respect to strength and durability
- apply the ISO tolerances in order to build in the machine components in a construction
- analyze and simulate selected machine components from a system perspective

Course contents

The course is about to analyze and design machine components. The analysis is done largely by applying the basic knowledge of mathematics, structural mechanics and mechanics. To illustrate important aspects of design and sizing five groups of commonly used machine components are studied: bearings, gears, brakes, couplings and joints. This course will also train the student to independently make assumptions and approximations, on their own to structure complex problems, and dealing with problems that lack a clear and unambiguous solution.

Disposition

The course consists of lectures and exercises.

Course literature

Maskinelement. Karl Olof Olsson, Liber, 2006, ISBN 91-47-05273-2.

Examination

- INL1 - Mandatory Assignment, 2.5 credits, grading scale: P, F
- TEN1 - Written Exam, 3.5 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.

Other requirements for final grade

Approved exam.

Approved assignments.

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.