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 2015

Grading scale

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

Education cycle

First cycle

Main field of study

Technology

Specific prerequisites

Passing grades in CAD1 part of the course ML1302 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 student should be able to:

- identify and describe the purpose and function of common machine components
- select an appropriate machine component with regard to its function
- use catalogs and standards to design machine components for strength and durability
- applying ISO tolerances of industry standard machine components
- analyze and simulate selected machine components from a system perspective
- make assumptions and approximations in the design of machine components
- structure problem solving situations that lack a clear and unambiguous solution

Course contents

- Commonly used machine components;

Springs; helical, disc, torsion and leaf springs
Fastener; screws and rivets
Brakes; disc and drum brakes
Bearings; rolling and plain bearings
Clutchess; ridgid, lamellar and centrifugal clutches
Drives; gear and different types of belt drives

- Functional decomposition and function modeling
- Systematic problem solving and solution presentation

Disposition

- The course consists of different course blocks each associated with one of the commonly used machine components (see list above).
- Each course block consists of one (1) lecture that presents the machine component to be studied.
- The lecture concludes with a reference to the self-correcting test (s) in BILDA and recommended reading in literature.
- The block ends with a seminar where a solution proposal is written through collaboration in project groups.
- Active participation is expected in all parts of the course.

Course literature

"Maskinelement Handbok" (2008). Institutionen för maskinkonstruktion, Kungliga Tekniska Högskolan, Stockholm

Magnus Evertsson och Per Svedensten, "Maskinelement Övningar" (2005). Studentlitteratur. ISBN 978-91-44-03619-9

Mart Mägi och Kjell Melkersson, "Lärobok i Maskinelement" (2014). Chalmers, Göteborg.

Examination

- INLA - Assignments, 2.0 credits, grading scale: P, F
- SEMA - Seminars, 1.0 credits, grading scale: A, B, C, D, E, FX, F
- TENA - 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.

Other requirements for final grade

Requirements for final grade:

A passing grade in INLA
Passing grades in SEMA and TENA

The final grade is calculated from the weighting of the grade from INLA (25%) and TENA (75%).

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.