# ML1212 Computer Support for Design Engineering 2 7.5 credits

## Datorbaserade ingenjörsverktyg 2

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 ML1212 valid from Spring 2015

## Grading scale

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

## Education cycle

First cycle

## Main field of study

Technology

## Specific prerequisites

Passed grade in CAD1 the part of ML1302 or the equivalent.

## Language of instruction

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

## Intended learning outcomes

The overall goal of the course is to give the student practical experience in how design engineers and engineers use computer-aided tools for industrial and mechanical design in realisation of component or product ideas in a product realisation process.

The course should also give a description of how computer tools are used in the creation of physical models in printed presentations, as well as electronic.

After passing the course, the student should be able to:

- Use a 3D CAD system to build, modify and manipulate digital solid models
- Carry out common digital image processing operations
- Produce components and product prototypes in physical, utilising digital 3D solid models
- Create presentations consisting of text and images for publication electronically and in print
- Describe the process of documentation of a (product) idea and communication of it to other people

## Course contents

- Advanced solid modeling in a 3D CAD system
- Free Form Fabrication (FFF) of component or product ideas
- Top-down modeling methodology and problem solution
- Exploded views and assembly drawings of product ideas
- Import, export, improvement and manipulation of digital images
- Simple rendering of solid models
- Mounting and improvement of images in background images
- Combining text, images and curves in presentation material

## Disposition

- Lectures

In this course, the students carry out self-studies at their own pace, but with the possibility of teacher assistance when necessary, and with lectures to support the studies.

## Course literature

Egenproducerade material används samt programvarornas on-line dokumentation. Programvaran och utbildningsmaterial från programvara leverantören är på Engelska.

## Examination

- INLA - Individual Computer Exercises, 4.5 credits, grading scale: A, B, C, D, E, FX, F
- INLB - Large Computer- Based Assignment, 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

- INLA - Individual computer exercises (4.5 cr) grading scale: A-F
- INLB - Larger computer exercise (3.0 cr) grading scale: A-F

The activities that are included in INLA and INLB and grading criteria that are used in examination will be communicated at the beginning of the course

The final grade of the course is calculated from grade in INLA (60%) and INLB (40%).

## 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.