Linnæus University

Jnr: 2014/3110-3.1.2

# Course syllabus

Faculty of Technology
Department of Mechanical Engineering

## 2MT014 Maskinkonstruktion 3, 7,5 högskolepoäng
## Machine Design 3, 7.5 credits

**Main field of study**
Mechanical Engineering

**Subject Group**
Mechanical Engineering

**Level of classification**
First Level

**Progression**
G2F

**Date of Ratification**
Approved by Faculty of Technology 2014-10-03
The course syllabus is valid from autumn semester 2015

**Prerequisites**
At least 60 credits within the subject of Mechanical Engineering where Machine design I, 7,5 HEC and Machine design II, 7,5 HEC or the equivalent are included.

## Objectives
After completing the course, the student is expected to:

- dimension and design machine elements for different applications and for different situations,
- use different standards as support in machine design work and use company catalogues for dimensioning and selection of standard machine elements,
- have understanding about the different manufacturing methods to design for manufacturing with respect to the environmental requirements and aspects,
- accomplish risk analyses already in the design stage to eliminate or minimize the risks for mechanical failures.

## Content
The course comprises the following elements:

- Dimensioning, design, and selections of some machine elements
- Design for environment
- Design or manufacturing
- Mechanical wear, machine failures and risks in technical systems.

## Type of Instruction
The teaching consists of lectures, exercises, projects and/or labs.

## Examination

The course is assessed with the grades A, B, C, D, E, Fx or F.
The grade A constitutes the highest grade on the scale and the remaining grades follow in descending order where the grade E is the lowest grade on the scale that will result in a pass. The grade F means that the student's performance is assessed as fail (i.e. received the grade F).

The course will be examined through a written exam and based on report of project work, or through the both methods.

## Course Evaluation

A course evaluation will be carried out and compiled after the course is completed. The compilation will be presented to the current board as well as to the students and filed.

## Credit Overlap

This course cannot be part of a degree in combination with another course in which the content fully or partly correspond to the content of this course: 2MT011 Machine Design 2, 7,5 hec

## Other

Grade criteria for the A–F scale are communicated to the student through a special document. The student is to be informed about the grade criteria for the course by the start of the course at the latest.

## Required Reading and Additional Study Material

**Required reading**

Juvinall, R and Marshek, K. Machine *Component Design* (fifth edition). John Wiley & Sons. 150 pages
Ulrich, K and Eppinger, S. *Product Design and Development (fifth edition)*. McGraw Hill. 100 pages

Lecture notes which can be purchased at the university copy center.

Standard sheets will be available at the course webpage on Mymoodle

**Reference literature**

Mott, R. *Machine Elements in Mechanical Design* (fourth edition). Pearson Prentice Hall
Van Beek, A. *Advanced engineering design-lifetime performance and reliability*.

www.engineering-abc.com.
Relevant research articles