



# MG1016 Manufacturing Technology 6.0 credits

Tillverkningssteknik

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

## Establishment

Course syllabus for MG1016 valid from Spring 2016

## Grading scale

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

## Education cycle

First cycle

## Main field of study

Technology

## Specific prerequisites

MF1061 Introduction to Design and Product Realization or MJ1103 Introduction to Mechanical engineering, or the equivalent

or the 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 will be able to:

- account for common cutting, shaping and joining manufacturing processes that are used in the manufacturing industry and apply these methods to produce simple components
- choose manufacturing process from the batch size, shape, tolerances and mechanical properties of a component
- propose appropriate surface treatment methods, and give examples of technical and mechanical surface function
- develop a process plan for the manufacturing of simple metallic components, using manual or numerically controlled machine tools (lathes and milling machines), including selection of tools, calculation of cutting data, and generation of part programmes,
- use basic metrology to verify function and quality of a manufactured product
- produce and interpret engineering drawings with dimensions, tolerances, section views and detail views
- describe the product realisation process (raw material- design- production- product).

## Course contents

In the course, you will study important manufacturing processes and systems and get an insight into the complete production process. Numerically controlled machine tools are central components in a modern manufacturing company. You will have the opportunity to use such machines all the way from the design, programming, rigging and test run, to the manufacturing of details. Other areas that are treated in the course are engineering drawings as a means of communication, common polymer materials and basic metrology techniques used to verify function and quality, as well as the characteristics of surfaces, and surface treatment.

## Disposition

Lectures

Exercises

Laboratory exercises

Written assignments

## Course literature

Tillverkningsteknologi, Jarfors med flera, Studentlitteratur 2010, ISBN 978-91-44-07039-1

Formler och Tabeller för Mekanisk Konstruktion, Karl Björk

## Examination

- TEN1 - Written Examination, 3.0 credits, grading scale: A, B, C, D, E, FX, F
- LAB1 - Workshop Practice and Homework Assignments, 3.0 credits, grading scale: P, 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.

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

The final grade is based on the result of the written examination and possible bonus points from optional quizzes

## Other requirements for final grade

Approved laboratory sessions and written assignments (LAB1; 3 credits)

Passed examination (TEN1; 3 credits)

## 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.