



MG1026 Manufacturing Technology 6.0 credits

Tillverkningssteknik

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

Establishment

Grading scale

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

Education cycle

First cycle

Main field of study

Technology

Specific prerequisites

MJ1103 Introduction to Mechanical Engineering or MF1046/MF1061 Design and Product Realization, Introduction,

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 used in the manufacturing industry, and apply these processes to produce simple components
- select a proper manufacturing process based on 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 programs
- use basic metrology to verify the function and quality of a manufactured product
- create and read an engineering drawing including main, section and detail views, specifying dimensions and tolerances
- describe a typical product realisation process, how raw material is transformed into a product through design and manufacturing
- analyse manufacturing processes from a sustainability perspective, and suggest improvements

Course contents

In the course you will study the most common manufacturing processes and systems used in industry, to get an insight into the complete production process

Numerically controlled machine tools are important components of a modern manufacturing company. You will use these machines in activities throughout the design, programming, rigging, test run and manufacturing of components.

Other areas covered 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 and workshop exercises on a number of different manufacturing technologies and processes. You will get practical experience through the hands-on workshop exercises, where you will manufacture using the different technologies and manufacturing and metrology equipment.

Course literature

"Tillverkningsteknologi" av Jarfors m fl. Studentlitteratur 2010, ISBN: 978-91-44-07039-1

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.

Other requirements for final grade

Passed written examination (TEN1; 3 cr)

Approved laboratory exercises and preparatory homework assignments (LAB1; 3 cr)

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.