MG1026 Manufacturing Technology 6.0 credits

Tillverkningsteknik

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 Design and Product Realization, Introduction

or equivalent.

Language of instruction

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

Intended learning outcomes

On successful completion of this course you will be able to:

- explain common cutting, shaping and joining manufacturing processes used in the manufacturing industry, and apply these processes to produce simple metal components
- select a proper manufacturing process based on component size, shape, tolerances and mechanical properties
- 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 a manufacturing drawing including section and detail views, to specify dimensions and numerical tolerances
- describe a typical product realization process (raw material -> design -> manufacturing -> product)

Course contents

In the course you will study the most common manufacturing processes and systems used in industry.

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 drive and manufacturing of a steel component.

Other areas covered in the course are engineering drawings as a means of communication, common polymer materials, basic metrology techniques used to verify the function and quality, the technical characteristics of surfaces and surface treatment.

Course literature

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

"Formler och tabeller för mekaniska 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.

TEN1 Written exam, 3hp. (A-F)

LAB1 Laborations and assignments, 3hp. (P/F)

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.