



MG2103 Industrial Process Engineering 6.0 credits

Industriell Produktionsteknik

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

Establishment

On 11/10/2019, the Dean of School of ITM has decided to establish this official course syllabus to apply from spring term 2020 (registration number M-2019-1295).

Grading scale

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

Education cycle

Second cycle

Main field of study

Mechanical Engineering

Specific prerequisites

MG1002 "Automation technology" 6 credits, or the equivalent English B or the equivalent knowledge.

Language of instruction

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

Intended learning outcomes

On completion of the course, the student should be able to:

- describe basic design and work principles for machine tools and industrial robots
- explain the concept of machining systems and factors that influence the precision of the systems
- use simulation tools for analysis and design of manufacturing systems
- justify when and why characterisation and testing of production machines are important
- compare how different product properties influence the choice of manufacturing processes, planning and operation
- use information from scientific articles and international standards for problem solving.

For higher grades furthermore:

- assess and justify differences between the different machine tool designs
- propose and justify solutions for design of, and work principles for machine tools and industrial robots for a flexible and resource efficient production

Course contents

The course covers the sub-areas:

- The components and structure of machine tools and industrial robots
- Advanced manufacturing systems and intelligent machine tools as integrated parts of the manufacturing system
- Flow and precision simulation for analysis and improvement of manufacturing systems and manufacturing processes
- Measurement and characterisation of the precision of machine tools

Examination

- LAB1 - Laboratory work, 1.5 credits, grading scale: P, F
- LITT - Summary and presentation of scientific articles, 1.5 credits, grading scale: P, F
- TEN2 - Written exam, 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.

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

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.