MG2036 Computer Aided Manufacturing - CAM 6.0 credits

Datorstödd tillverkning - CAM

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

Establishment

Course syllabus for MG2036 valid from Spring 2020

Grading scale

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

Education cycle

Second cycle

Main field of study

Specific prerequisites

MG2028/MG2128 CAD and other IT Tools in Industrial Processes
MG1016/MG1026 Manufacturing Technology and MG1024 Production 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 completing the course with a passing grade the student should be able to:

- describe the role of the process planning in the product realisation process
- account for theory of process planning, which activities that are included, in which order and their relation to each other
- explain and give examples of how type of product, manufacturing requirements and available manufacturing equipment influences the decisions that are taken in the process planning
- explain how digital models and computer-aid are used in process planning
- demonstrate practical skills in using a CAM program
- carry out a process planning process which includes choice of:

o machine o setup o manufacturing process o tools o method parameters

- document the process planning result to communicate and assure the quality of the manufacturing process

Course contents

- concepts, basics and theory in process planning
- different types of numerically controlled machine tools and for which types of products that they are suitable
- different types of cutting tools and engineering materials
- different types of fixtures and the relation of the fixture design to process planning
- interpretation of manufacturing requirements for selecting proper manufacturing processes and design of the processes
- communication and quality assurance of a manufacturing process
- process planning for small and large scale production- design and simulation of manufacturing processes in CAM programs
- digital models, standards for digital representation of product and process data, model driven work methods, the roles of man and computer in automation of process planning

Disposition

Lessons, exercises and labs. The course requires a large share of individual work outside of scheduled classes

Course literature

Kan laddas ner från Canvas av registrerade kursdeltagare

Lecture handouts, papers, exercises etc, can be downloaded from LMS by registered course participants

Examination

- INLA - Technical Report, 3.0 credits, grading scale: A, B, C, D, E, FX, F
- LABB - Laboratory work and Home work, 2.0 credits, grading scale: P, F
- LITT - Report, -study visit, log book, 1.0 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.

Other requirements for final grade

Participation in study visit(s)

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.