LUNDS UNIVERSITET
Lunds Tekniska Högskola

Course syllabus

Produktion
Production

MMTF01, 6 credits, G2 (First Cycle)

Valid for: 2023/24
Faculty: Faculty of Engineering, LTH
Decided by: PLED M
Date of Decision: 2023-04-11

General Information

Main field: Industrial Design.
Compulsory for: KID3
Language of instruction: The course will be given in English

Aim

A major part of the final properties and cost of a product are decided through the choice of engineering materials and manufacturing methods, and how the chosen methods are designed and controlled. The main purpose with the course is to give the student a broad understanding of existing manufacturing processes and their association with the property of engineering materials, in order to be able to control the critical product attributes; cost, function and properties.

Learning outcomes

Knowledge and understanding
For a passing grade the student must

be able to define and describe specific terms in manufacturing technology, in Swedish and in English.

individually and in writing, be able to assess and compare different manufacturing processes, regarding function, result and efficiency.

be able to value the properties and the use of different material groups and to relate these to appropriate production processes.

be able to integrate basic knowledge from material science, solid state physics and

mechanics.

Competences and skills
For a passing grade the student must

with reference to a physical component, within given frames, be able to analyze the used manufacturing methods, integrate knowledge from material science, and in group present the results in a written report.

individually be able to seek and put together information on a given manufacturing process.

Contents

Production technology will cover major part of manufacturing processes applied for creating form and shape of the product. The manufacturing processes covered in this course include: casting processes, such as sand casting, shell mold casting, die casting and investment casting; forming processes, such as hot and cold forging, rolling, extrusion, bending, deep drawing, wire drawing and spinning; shearing operations such as blanking and fine blanking; metal cutting methods such as turning, milling grinding, threading and drilling; non-traditional machining processes, such as chemical, electrochemical, erosive, laser and ultrasound machining; joining processes including metallurgy, weldability of the materials and different welding methods, such as fusion welding and solid state wleding processes.

Examination details

Grading scale: TH - (U,3,4,5) - (Fail, Three, Four, Five)
Assessment: Written examination, written assignments and compulsory experimental exercises.

The examiner, in consultation with Disability Support Services, may deviate from the regular form of examination in order to provide a permanently disabled student with a form of examination equivalent to that of a student without a disability.

Admission

Assumed prior knowledge: FKMA05 Materials and VSMA01 Mechanics or equivalent.
The number of participants is limited to: No

Reading list

- Kalpakjian S., Schmid S. R.: Manufacturing Engineering and Technology, Sixth edition in SI units. Prentice Hall, 2010, ISBN: 978-981-06-8144-9.

Contact and other information

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