



MH2281 Metal Forming 6.0 credits

Metallformning

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

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

Establishment

The official course syllabus is valid from the autumn semester 2023 in accordance with the decision from the Dean of the School: M-2023-1201. Date of decision: 2023-06-09.

Grading scale

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

Education cycle

Second cycle

Main field of study

Specific prerequisites

Basic knowledge about the mechanical properties of metals the mechanical properties of the equivalent MH2050 Mechanical Properties of Materials, 6 higher education credits

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

- Explain basic principles of plastic deformation of metals at high temperatures.
- Explain the origin of textures and fibres and give an account of their effects.
- Describe the most common forming processes for metals.
- Apply basic models for describing the plastic properties of metals.

In order to:

Be able to model the flow curve so that forces and energy requirements at plastic forming processes can be assessed. Be able to work in a forge or rolling mill, or other industry where mechanical properties and metal processing equipment are of interest. Have knowledge enough to study the subject furthermore through courses, textbooks and scientific articles.

Course contents

The course contains basic knowledge about the mechanical properties of metals at processing, which generally implies high temperature and high strain rate. Plastic deformation is regarded from crystal-plastic and continuum-plastic perspectives where one- and multidimensional deformations are compared. Material models suited to describe sense of yield stress in processing operations are studied as well as texture and anisotropy caused by plastic processing. The most common processing operations are studied, and the material behaviour in the deformation zone is discussed.

Examination

- INL2 - Assignment, 1.5 credits, grading scale: P, F
- KON2 - Partial exam, 1.5 credits, grading scale: P, F
- TEN2 - Home examination, 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.

Students who have not completed the course with earlier set of examining items are examined on TEN1.

Transitional regulations

Former examining item INL1 and KON1 and TENB be examined in INL2, KON2 and TEN2.

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.