



MH2054 Materials Processes I

7.5 credits

Materials processer I

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 2024 in accordance with the decision by the Director of First Cycle Education: M-2024-0537. Date of decision: 2024-03-15.

Grading scale

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

Education cycle

Second cycle

Main field of study

Materials Science and Engineering

Specific prerequisites

In total 90 higher education credits in the main field of study of Technology.

Language of instruction

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

Intended learning outcomes

After passing the course, the student should be able to:

1. Analyse the basic processes for metal production and explain how a sustainable metal production is a part of the circular economy.
2. Analyse and apply basic kinetic and thermodynamic theories to evaluate metal production processes.
3. Analyse and explain how an industrial process chain for metal production is built-up.

Course contents

The course focuses on explaining how sustainable metal production in a modern industry is a part of the circular economy in society. Here, the fundamentals of metal production are given based on both ore raw materials and recycled materials, with examples from iron and steel production, aluminium production, copper production and metal powder production. Furthermore it is explained how basic thermodynamic and kinetic theories can be used to optimise metal production.

Examination

- LAB1 - Computer assignment, 1.0 credits, grading scale: P, F
- PRO3 - Thermodynamics, 2.0 credits, grading scale: A, B, C, D, E, FX, F
- PRO4 - Kinetics, 2.0 credits, grading scale: A, B, C, D, E, FX, F
- PRO5 - Production processes, 2.0 credits, grading scale: A, B, C, D, E, FX, F
- STU2 - Study trip, 0.5 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.

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.