



MH2026 Introduction to Materials and Process Design 9.0 credits

Introduktion till material och process design

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

Course syllabus for MH2026 valid from Autumn 2007

Grading scale

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

Education cycle

Second cycle

Main field of study

Specific prerequisites

Language of instruction

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

Intended learning outcomes

After completed course the student will have

- an understanding of the complexity of materials and process design and have basic knowledge of
- thermodynamics
- phase equilibria, phase transformations, phase diagrams and their relation to microstructure
- transport phenomena (mass and heat)
- pyrometallurgical operations.

Course contents

The course gives an overview of the field of materials and process design and is an introduction to more advanced courses in Thermodynamics, Process Metallurgy, Kinetics and Microstructures. The course includes invited lectures given by experts in relevant fields.

Thermodynamics: “MH2030 Fundamentals of Thermodynamic and Kinetic Computations”

Process metallurgy: “MH2029 Process Metallurgy Applications”

Kinetics: “MH2028 Chemical Kinetics and Rate Phenomena”

Microstructures: “MH2027 Micro and Nano Structures in Materials”

Course literature

Distributed materials.

Examination

- LAB1 - Laboratory Work, 1.5 credits, grading scale: P, F
- TEN1 - Examination, 3.5 credits, grading scale: A, B, C, D, E, FX, F
- TEN2 - Examination, 2.0 credits, grading scale: A, B, C, D, E, FX, F
- TEN3 - Examination, 2.0 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.

Other requirements for final grade

Exam: Thermodynamics (TEN1; 3.5 cr)

Exam: Process metallurgy (TEN2; 2 cr)

Exam: Kinetics (TEN3; 2 cr)

Exam: Microstructures (LAB1; 1.5 cr)

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.