MH2504 Industrial Metallurgical Processes 6.0 credits

Industriella metallurgiska processer

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

Establishment

Course syllabus for MH2504 valid from Autumn 2020

Grading scale

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

Education cycle

Second cycle

Main field of study

Specific prerequisites

Good knowledge in material design, including thermodynamics, phase diagrams and diffusion of high-perfomance materials.

Good knowledge of the use of simulation software (eg Thermo-Calc, Dictra, Matlab).

Good knowledge of the application of the thermodynamic theories and the basic aspects and phenomena that are essential for understanding metallurgical processes.

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:

· Design a detailed and comprehensive project plan

· Carry out a project to achieve a stated research goal

· Write a research report and orally present research results

· Be able to discuss in detail how the research project contributes to solving specific research goals

Course contents

The course consists of a project that aims to provide and in-depth understanding of an area in material science, improved project management and communication skills and practical skills in material science.

The various projects deal with different areas and aspects of material science. The scientific quality of a project is only included in a small part of the assesment. The course and assesment of the project focuses on project management, communication and aspects such as calculations, simulations, experiments and field investigations.

A list of suitable projects is presented at the beginning of the course. The project work is carried out in groups of 2-3 students, but can also be carried out individually. Students can also propose their own project, but the course coordinator must then approve this. Each project must have a supervisor from KTH to support the project work, if the project does not already have a supervisor, the course coordinator assigns a supervisor.

All projects must generate:

- A project plan that has been approved by the supervisor after an oral presentation
- Regular meetings between the student and the supervisor, on average on hour per week
- A written technical report / research report, including;
- Introduction / goals of the project
- Literature study / Background
- Experiment / Method (calculations, simulations, field surveys)
- Results
- Discussion, Conclusion, Analysis of results
- References of used work

Examination

- PRO1 - Project, 6.0 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.

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.