MH2042 Simulation and Modeling Toolbox 6.0 credits

Verktygslåda för simulering och modellering

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

Establishment

Course syllabus for MH2042 valid from Spring 2011

Grading scale

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

Education cycle

Second cycle

Main field of study

Materials Science, Materials Science and Engineering

Specific prerequisites

Transport Phenomena (MH1018 or similar)

Applied Thermodynamics and Kinetics I and II (MH2040 and MH2041)

Numerical Methods and Basic Programming (DN1212 or similar)

Basic Programming such as Matlab

Language of instruction

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

Intended learning outcomes

· Define and setup materials process problems

· Apply equations of change on materials process problems

· Simulate processes using software available today

· Interpret the simulation results

· Have some basic knowledge of the limitations of the software

· Present the results in a scientific manner, both orally and written

Course contents

· Introduction to simulation methods, limitations and possibilities in general.

· Review of some of the modeling software today.

· Exercises introducing the students to some modeling software, including limitations and possibilities of the specific software.

· Selection and planning of a modeling problem.

· Solution of the modeling problem project.

· Written and oral presentation of the project.

Disposition

Lectures: 10h

Exercises/Lab.: 8h

Seminar: 8h

Examination

- SEM1 - Seminar, 2.0 credits, grading scale: A, B, C, D, E, FX, F
- PRO1 - Project Assignment, 4.0 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.