MH2045 Energy and Materials Sustainability 6.0 credits

Energi- och materialhållbarhet

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

Establishment

On 2023-06-09, the Dean of the ITM school has decided to establish this official course syllabus to apply from autumn term 2023 (registration number M-2023-1199).

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

Basic knowledge of energy and environmental issues and about process industry, corresponding to the course MH1022, Fabrication Processes of Metals and Bio Fibres, 7 credits, or the equivalent.

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 participant should be able to:

- Evaluate and critically review an existing process path based on sustainability aspects and the specific sustainability targets
- Give example of and evaluate relevant environmental indicators in an existing process
- Distinguish and categorise causes and sources to problems with environmental effects and propose and evaluate appropriate control mechanisms for these
- Evaluate and critically review a life-cycle analysis of an existing process
- Critically review and justify sustainability aspects in a given process path

Course contents

The course gives specialised knowledge and understanding of how industrial processes and products influence the environment as well as the legal aspects and strategies to minimise environmental impact.

The course focuses particularly on the possibilities and limitations of the process industry to both decrease its emissions of waste to atmosphere and water, and its energy use, through life-cycle analysis of energy and material.

The course structure includes:

- Lectures
- Project Work
- Study visits/Fieldwork

Examination

- PRO1 - Project Assignment, 2.0 credits, grading scale: A, B, C, D, E, FX, F
- NÄR1 - Presence, 2.0 credits, grading scale: P, F
- LAB2 - Laboratory work, 2.0 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.

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.