ML2304 Sustainable Development in Industry 6.0 credits

Hållbar utveckling i industriell verksamhet

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

Establishment

Course syllabus for ML2304 valid from Spring 2020

Grading scale

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

Education cycle

Second cycle

Main field of study

Mechanical Engineering

Specific prerequisites

Completed course ML1503 Industrial systems II, 6 credits or the equivalent.

Completed course ML1502 Sustainability in industry, 7.5 credits or the equivalent.

Completed degree project course, first cycle, 15 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 students should be able to:

- Describe the concept of sustainable development and the context where it is applicable for industry and the industrial system.
- Analyse advantages with an increased sustainability in an industrial operation by describing, explaining and reflecting on the major benefits that industrial actors can obtain by incorporating sustainability in their strategies and operational activities.
- Analyse conditions and preconditions for increased sustainability in an industrial operations and relate these to some of the limitations and obstacles that industrial activities face with regard to a transition to increased sustainability.
- Explain and deepen the basics of the central elements in industrial ecology, material and energy flow analysis, cleaner production, circular economy, circular production and the social responsibility of companies.

Course contents

The content of the course is based on material and energy flow analysis, cleaner production, circular economy, industrial ecology and sustainability handling.

The content deals with the input and output flow of material and energy for individual industrial producers as well as for larger industrial systems and networks. The physical flows are connected to strategic, organisational and management studies and methods, to understand the three dimensions of sustainability: economical, environmental and social, and how they are manifested in industrial companies and industrial systems.

Examination

- TEN1 - Written exam, 3.0 credits, grading scale: A, B, C, D, E, FX, F
- INL1 - Assignment, 3.0 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.

The examiner decides, in consultation with KTH's coordinator for disabilities (Funka), about possible adapted examination for students with documented, permanent disabilities. The examiner may permit other examination format for re-examination of 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.