ML1501 Industrial Systems I 7.5 credits

Industriella system I

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

Establishment

Course syllabus for ML1501 valid from Autumn 2019

Grading scale

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

Education cycle

First cycle

Main field of study

Technology

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 should be able to:

- define and account for system theory, system structure and group dynamics, while also understanding the central concepts and models
- show skills within system dynamics through application of systems perspective within production systems with respect to different aspects of sustainability (economical, environmental and work-related)
- account for the life-cycle of a system
- carry out a simple life-cycle analysis (LCA) with regard to sustainability
- create process models with IT tools
- apply tools for simpler analyses of work processes
- apply various methods and tools for the simulation and modeling of systems and processes
- explain the central processes in software engineering and design (systems engineering)
- explain the importance of communication in software engineering and give examples of engineering processes that promote communication, learning and systems view

Course contents

Lectures and seminars:

- Systems theory and system dynamics
- Simulation and modelling
- Life-cycle stages and life-cycle analysis
- Guest lectures and overview of cases from the industry on improvement work and software engineering
- Tools, methods and models for process modelling of work processes, workflows and socio-technical systems
- Project with system simulation with computer tools such as STELLA.

Examination

- INL1 - Assignments, 1.5 credits, grading scale: P, F
- PRO1 - Project, 2.5 credits, grading scale: A, B, C, D, E, FX, F
- ÖVN1 - Exercises, 1.5 credits, grading scale: P, F
- TEN1 - Written 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.

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.