



# ML2115 Tools and Technical Solutions in Logistics 7.5 credits

Teknik och verktyg inom logistik

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

If the course is discontinued, students may request to be examined during the following two academic years

## Establishment

Course syllabus for ML2115 valid from Autumn 2018

## Grading scale

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

## Education cycle

Second cycle

## Main field of study

Mechanical Engineering

## Language of instruction

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

## Intended learning outcomes

On completion of the course, the student should be able to:

- Design a simulation model of a logistics system and verify and validate it
- Test alternative logistics solutions by designing relevant experiments, analyse the results and draw conclusions by means of a simulation model.
- Reflect on difficulties during the different stages in a simulation study and on the requirements that they impose on the implementation
- Analyse and assess different technical solutions for material handling in production, stock, distribution and transshipment sites (from simple equipment such as trucks, to Industry 4.0 solutions).
- Propose a plan for introduction of technology in different logistic processes and be able to evaluate/carry out a consequence analysis and a change analysis.
- Explain different technical components and their interaction with people (machine-man, machine-robot, robot-machine).
- Analyse the effect of using technology from an ethical, ergonomic, socioeconomic and environmental perspective.

## Course contents

- Information and communication technologies in logistics
- Systems for material handling
- Different software systems to facilitate and improve materials and information flows.
- Different hardware/system components for material and information flows
- Simulation and modelling
- Sustainability and technical solutions (Socio-technical and ethical perspective)

## Disposition

Lectures

Laboratory exercises

Project

## Specific prerequisites

Engineer or Degree of Bachelor of at least 180 credits in technology, economics or the equivalent. Entry requirements in Swedish and English equivalent Swedish B/Swedish 3 and English A/English 6.

Logistic 5 credits.

## Course literature

Kurslitteratur meddelas 10 veckor innan kursstart



utvalda artiklar och utdelat material

## Examination

- LAB1 - Laboratory work, 2.5 credits, grading scale: A, B, C, D, E, FX, F
- PRO1 - Project, 2.5 credits, grading scale: A, B, C, D, E, FX, F
- TEN1 - Written examination, 2.5 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.

## Other requirements for final grade

approved examination

passed laboratory sessions

passed project

Final grade is weighted according to the extent of the examination components

## 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.