



# ME2053 Logistics & Supply Chain Management 6.0 credits

## Logistik & Supply Chain Management

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

The Director of First and Second Cycle Education of ITM school determined on 15/03/2024 to establish this official course syllabus to apply from autumn term 2024 (registration number M-2024-0545).

## Grading scale

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

## Education cycle

Second cycle

## Main field of study

Industrial Management

## Specific prerequisites

Satisfies the requirements for a Degree of Bachelor

6 credits in basic industrial economics or business economics,

English B/ English 6 or 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:

1. Apply mathematical models for adaptive and static forecasting and optimal inventory management
2. Apply linear programming techniques to optimise aggregate planning and network design problem
3. Describe cost efficient balance for design of supply chains/distribution network
4. Describe and apply different strategies to decrease the total costs in supply chains
5. Apply "scale-curve utilization" on problems that concern the design and optimal handling of resources of the supply chains
6. Synthesise and evaluate the effects of capacity changes in supply chain management
7. Describe, explain and synthesise subjects that concern logistic and supply chain management.
8. Apply mathematical models for anticipating demand solve/optimize problems in aggregate planning, inventory management and resource exploitation
9. Analyse a given case and create and explain an optimal and sustainable solution by applying strategies in logistic and Supply Chain Management.

## Course contents

The course covers the following fields:

- Process descriptions of supply chains and of how these are led and controlled.
- The role of the logistic for management and control of supply chains.
- Methods to measure a the performance of supply chains, network design, facility location and capacity.
- Demand forecasting with adaptive and static models.
- Aggregate planning.
- The Bullwhip-effect, coordination problems and the role of IT.
- Inventory management models for deterministic and stochastic demands and effects of lead time uncertainty.
- Transportation in supply chains, multi-modal networks and their impact on supply chains.
- Effect of different logistics solutions and supply chain configurations on sustainability and optimal management strategies.

## Examination

- INL3 - Assignment, 2.0 credits, grading scale: A, B, C, D, E, FX, F
- INL4 - Assignment, 1.0 credits, grading scale: P, F
- TEN2 - Examination, 3.0 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.

## 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.