



Logistics theory and its applications Logistiska teorier och deras tillämpning

7.5 credits

Ladok Code: 41L03L

Version: 2.0

Established by: Education Committee 2014-10-06

Valid from: Spring 2018

Education Cycle: First cycle

Main Field of Study (Progressive Specialisation): Industrial Economics (G1N)

Disciplinary Domain: Technology

Subject Area: Industrial Engineering and Management

Prerequisites

Meets requirements for acceptance to a graduate engineer programme (or equivalent).

Goal

The purpose of the course is to equip students with knowledge and understanding of various scientific theories that form the basis for research in logistics and supply chain management. The course also demonstrates methods and applications for assessing, quantifying and controlling logistics and SCM processes. A further purpose of the course is to explain and compare the interplay between basic logistics theories and their interwoven application. The course also considers the area of trade facilitation as an example of a multidisciplinary research area in logistics and SCM.

After completing the course, the student should:

1 Knowledge and understanding

1.1 have a good grasp of the conceptual apparatus of logistics and SCM,

1.2 be able to understand theoretical frameworks, methods and research in logistics and SCM,

1.3 be able to understand and analyse the complexities in logistics and SCM,

1.4 be able to understand and analyse economic aspects of logistics and SCM,

1.5 be able to understand and analyse basic material and resource flow relating to logistics and SCM with a basis in scientific theory.

1.6 be able to understand cost and price setting mechanisms from a supply chain perspective and how these affect the entire supply chain,

2 Skills and capabilities

2.1 be able to understand the various theories' significance for logistics and SCM research, as well as how they together affect applications in logistics and SCM,

2.2 be able to distinguish different theoretical assumptions in logistics and SCM research, as well as how these affect research and applications in logistics and SCM,

2.3 have the ability to understand the various components as well as to evaluate how the totality of change work in logistics is affected by theories and applications in logistics and SCM research,

3 Judgement and approach

3.1 demonstrate insight into sustainability aspects of logistics and SCM research and applications,

3.2 demonstrate insight into and understanding of logistics and SCM research as a scientific process

Content

- Utility theory
- Transaction cost analysis
- Resource-based view
- Principal agent theory
- Trade facilitation
- Case study methodology
- General systems theory
- Complexity theory
- Material and resource flow
- Closed loop supply chains
- Sustainability

Forms of Teaching

The teaching methods are lectures, supervision and seminars in case studies.

The language of instruction is Swedish. However, instruction in English can occur.

Forms of Examination and Grading Scale

Examination of the course occurs through:

- Written Exam 2 hp Grading scale: TH
- Seminary 1-Theories 1 hp Grading scale: UG
- Seminary 2 - Science Methods 1 hp Grading scale: UG
- Projectreport & Final Seminar 3.5 hp Grading scale: TH

After all individual elements have been approved, a final grade is given based on an evaluation of both the TH grades in the examination and the project report, where the number of higher education credits in the different elements is a weighting factor.

The grading scale for the course is: U, 3, 4 or 5

Student rights and obligations at examination are in accordance with guidelines and rules for the University of Borås.

Literature and Other Teaching Methods

Jonsson, Patrik & Mattsson, Stig-Arne (2011). *Logistik: läran om effektiva materialflöden*. 2nd edition Lund: Student literature

Klaus, Peter & Müller, Stefanie (ed.) (2012). *The roots of logistics: a reader of classical contributions to the history and conceptual foundations of the science of logistics*. Berlin: Springer

Scientific and popular science articles on logistics and SCM

Student Influence and Evaluation

The head of department and teacher responsible for the course are responsible for ensuring that students are invited systematically and regularly to put forward their views on the course. The results of the evaluations will be reported back to the students and will form the basis for the future structure of the course.

Miscellaneous

Recommended previous knowledge

Content of the courses:

Logistics tools and methods, 7.5 higher education credits

Control of supply chains and purchasing, 7.5 higher education credits

Material planning and control at basic level, 7.5 higher education credits
Introduction to scientific theory and method, 7.5 higher education credits