Logistics Resource Planning

Programme course

6 credits

Planering av logistikresurser

TNK100

Valid from: 2017 Spring semester

Determined by
Board of Studies for Industrial Engineering and Logistics

Date determined
2017-01-25

Offered for the last time
Spring semester 2021

Replaced by
TNK123

Main field of study
Transportation Systems Engineering

Course level
Second cycle

Advancement level
A1X

Course offered for
- Intelligent Transport Systems and Logistics, Master's programme
- Communication and Transportation Engineering, M Sc in Engineering

Entry requirements
Note: Admission requirements for non-programme students usually also include admission requirements for the programme and threshold requirements for progression within the programme, or corresponding.

Prerequisites
Basic courses in Logistics, Modelling, Optimization and Simulation.

Intended learning outcomes
After the course the student is expected to be able to
- dentify and define logistics resources together with their associated costs.
- transform a customer’s requirements to a production order, and/or a purchase order in different planning and control philosophies.
- use the basic concepts of Manufacturing Resource Planning.
- use the basic concepts of Lean Production.
- use the basic concepts of the Theory of Constraints.
- calculate the capacity requirements for a production plan.
- plan for distribution and transports in a cost efficient manner

Course content

The course contains methods and techniques for planning of resources in logistics at different levels of a production company. Part 1 puts focus on the internal planning in a production company. Production planning and control at different levels with capacity calculations on each level, helps transform the customer's requirement into a requirement at the supplier. Part 2 contains different methods for planning and control such as Lean production, Just in Time, and Drum-buffer-rope. Inventory control at different levels is also part of the planning in a supply chain. Part 3 focuses on transportation resources. Planning and execution of transports and different modes of transportation are discussed. The role of the forwarding agent is analysed and transportation costs are kept in focus. The course, as a whole, is based on the use of quantitative models at every level of planning and control.

Teaching and working methods

The lectures are mainly concerned with theoretical issues and concepts. The exercises are devoted to demonstrations of problem solving. The laboratories give a hands-on experience with treated techniques.

Examination

LAB1	Laboratory work	1 credits	U, G
TEN1	Written examination	5 credits	U, 3, 4, 5

Grades

Four-grade scale, LiU, U, 3, 4, 5

Department

Institutionen för teknik och naturvetenskap

Director of Studies or equivalent

Erik Bergfeldt

Examiner

Fredrik Persson

Education components

Preliminary scheduled hours: 44 h
Recommended self-study hours: 116 h

Course literature

Jacobs, Berry, Whybark och Vollmann (2011) ”Manufacturing Planning and Control for Supply Chain Management”, 6e uppl.

Common rules

Regulations (apply to LiU in its entirety)

The university is a government agency whose operations are regulated by legislation and ordinances, which include the Higher Education Act and the Higher Education Ordinance. In addition to legislation and ordinances, operations are subject to several policy documents. The Linköping University rule book collects currently valid decisions of a regulatory nature taken by the university board, the vice-chancellor and faculty/department boards.

LiU's rule book for education at first-cycle and second-cycle levels is available at http://styrdokument.liu.se/Regelsamling/Innehall/Utbildning_pa_grund-_och_avancerad_niva.