

35E00300 Product and Inventory Management

SYLLABUS

Version (11.09.2017)

Instructor's contact information	Course information
Markku Kuula Markku.Kuula@aalto.fi Sadaat Ali Yawar sadaat.aliyawar@aalto.fi H5:27 By agreement https://people.aalto.fi/index.html?language=english#markku_kuula	M.Sc.(Econ), Information and Service Management programme; advanced specialization studies. Period I (2017-2018) Location English https://noppa.aalto.fi/noppa/kurssi/35e00300

1. OVERVIEW

Students learn to analytically solve problems and make decision considering forecasting, inventory planning and service levels, profitability, product range, supply chain dynamics, facility location, distribution, and routing.

2. PREREQUISITES

Thorough knowledge in Tuotantotalous (35A00110), Tuotantotalouden perusteet (35A00310), Operations Management (35A00210), or corresponding skills acquired elsewhere highly recommended.

Mathematical skills recommended: Basic calculus, polynomial functions and their derivation, regressions.

Statistics skills recommended: Statistical distributions and central limit theorem.

Good MS Excel skills.

Recommended also for Logistics PhD-students.

3. LEARNING OUTCOMES

The course provides an integrated methodology for strategy based inventory and product management in supply chains.

4. ASSESSMENT AND GRADING

1. Lectures and exercises 34 h., 2. Obligatory cases and assignments (60%) 3. Exam (40%).

5. ASSIGNMENTS

22.09. Fri	Effectiveness and efficiency in logistics	Assignment feedback session	Assignment 1
29.09. Fri	Forecasting	Assignment feedback session	Assignment 2
06.10. Fri	Inventory management	Assignment feedback session	Assignment 3
13.10. Fri	Stochastic inventory control	Assignment feedback session	Assignment 4
20.10. Fri	News vendor problem, lot-sizing	Assignment feedback session	Assignment 5

Silver, Edward A. (1998) Inventory management and production planning and scheduling. ISBN 0-471-11947-4.
 Availability: https://alli.linneanet.fi/vwebv/search?searchCode=GKEY%5e*&limitTo=none&searchType=1&searchArg=35E00300&sk=en_FI
 + Lecture material and course reading package.

7. PRELIMINARY SCHEDULE

Product and Inventory Management (35E00300)
Aalto University School of Business - Department of Information and Service Economy
Lectures: Mondays and Wednesdays (G-112) 12.15-13.45
Exercises: Fridays (to be announced) xx.15-xx.45

11.09. Mon	Effectiveness and efficiency in logistics	Course introduction, Measures in logistics, ABCD analysis	Lecture 1
13.09. Wed	Effectiveness and efficiency in logistics	Activity based costing, Du Pont -model, Turnover, Modeling in logistics	Lecture 2
18.09. Mon	Forecasting	Trend adjustment: Holt's method , Trend and seasonal variation adjustment: Winter's model, optimizing the parameters for the above methods	Lecture 3
20.09. Wed	Inventory management 1	Stochastic demand, Safety stocks, Single products with time-variable demand, dynamic programming	Lecture 4
25.09. Mon	Inventory management 1	Wagner-Whitin method, Silver-Meal heuristics, Time supply, Lot-for-lot, Least unit cost, Part-period balancing, Heuristics	Lecture 5
27.09. Wed	Yield Management	Yield Management – stochastic demand	Lecture 6
02.10. Mon	Multi-echelon inventories in supply chain	Bullwhip effect, Deterministic demand, Probabilistic demand, Arborescent system, Supply chain contracts, Distribution requirements planning	Lecture 7
04.10. Wed	Multi-period production planning	Multi-period production planning, Repair crew planning	Lecture 8
09.10. Mon	Case Capacent	Case Capacent - preparation	Lecture 9
11.10. Wed	Case Sport Obermeyer	Case Sport Obermeyer feedback session	Lecture 10
16.10. Mon	Case Capacent	Case Capacent feedback session	Lecture 11
18.10. Wed	Course Wrapup	Course Wrapup	Lecture 12

8. COURSE WORKLOAD

Classroom hours	24 h
Exercise sessions	10 h
Theory exam preparations	26 h
Assignments	60 h
Cases	40 h
Total	160h (6 op)

9. ETHICAL RULES

Aalto University Code of Academic Integrity and Handling Thereof>

<https://into.aalto.fi/pages/viewpage.action?pageId=3772443>

10. OTHER ISSUES

- Registration to course: WEB-ODI
- Changes to the schedule are possible!