

# Production and logistics planning 2015

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## Study guide

Welcome to the course Production and logistics planning, KPP227, 2015. This study guide is intended to inform and guide you on what to expect and how to approach the course. I hope the guidance provided in this document will be helpful in achieving the study goals you have for this course. I recommend that you read this guide as soon as possible so that you see what to expect, and plan your studies in a sufficient way. Further I recommend that you check the availability of the book and buy it in advance so that you have it when the course starts. If you, for some reason not can participate on the course start on November 10:th, you have to notify me in advance. Otherwise you risk loosing your registration on this course. I am looking forward to see you on November 10:th.

Antti Salonen  
Ph.D, Senior lecturer

**Course code: KPP227**

**Course responsibility: Antti Salonen**

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**Examiner: Antti Salonen**

**Literature:**

Operations Management: Processes and Supply Chains: Global Edition, 10:th edition<sup>1</sup>, by Lee J.Krajewski, Larry P.Ritzman and Manoj K.Malhotra, ISBN: 978-0-273-76683-4

**Note:** Editions 8 or 9 should probably be ok.

The PowerPoint presentations from each lecture will be available in PDF format as additional teaching material. Also, files with study questions, SQ, will be provided for your convenience. Various additional documents may be included in the course.

**Webpage: <http://zoomin.idt.mdh.se/course/kpp227/>**

**Learning objectives:**

Student shall show ability to:

- Describe production and logistics systems through a broad range of examples.
- Utilize production and logistics planning techniques to solve production and logistics problems.
- Prepare a production plan through the use of aggregate planning.
- Analyze and evaluate the solutions from production and logistics problems.
- Optimize inventory and production sequencing.
- Optimize inbound and outbound (distribution) costs through the use of transportation techniques.

**Examination:**

- Project (Pro1): 1.5 credits: Literature study (gives up to 5 bonus points for the written exam)
- Written exam (Ten1): 6 credits

**Attendance:**

I strongly recommend you to attend all lectures!

There are no mandatory lectures. However, over the years, I have noticed a very strong correlation between lecture absence and exam failure.

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<sup>1</sup> Editions 8 or 9 should be ok.

## **Lecture plan/reading instructions**

### **Lecture 1 – Introduction to logistics**

- PP-presentation: PLP\_Introduction to logistics
- Hand out: "Logistics"

### **Lecture 2 – Performing a literature study**

- PP-presentation: PLP\_Literature study
- Example literature studies remain to be specified.

### **Lecture 3 - Forecasting, linear regression, Time series, Exponential smoothing**

- Operations Management, Ch. 14, pp.483 – 505
- PP-presentation: PLP\_Forecasting
- SQ Forecasting

### **Lecture 4 – Capacity planning, Waiting lines**

- Operations Management, Ch. 6, pp.221 – 233
- Operations Management, Supplement A: Break even analysis, pp.51 – 55
- Operations Management, Supplement B: Waiting line models, pp.245 – 258
- PP-presentation: PLP\_Capacity and break even analysis
- PP-presentation: PLP\_Waiting lines
- SQ Capacity

### **Lecture 5 – Location**

- Operations Management, Ch. 11, pp.405 – 420
- PP-presentation: PLP\_Location
- PP-presentation: PLP\_Transportation
- SQ Location

### **Lecture 6 – Layout, Line balancing**

- Operations Management, Ch. 3: Layout, pp.117 – 120
- Operations Management, Ch. 7, pp.263 – 279
- Operations Management, Ch 8: Designing Lean System Layouts, pp.305 – 307
- PP-presentation: PLP\_Layout and Line balancing
- SQ Layout Line balancing

### **Lecture 7 – Aggregate planning**

- Operations Management, Ch. 15, pp.527 – 541
- PP-presentation: PLP\_Aggregate planning
- SQ Aggregate planning

### **Lecture 8 – Inventory management and control**

- Operations Management, Ch. 10: Inventory measures, p. 384
- Operations Management, Ch. 9, pp.327 – 349
- Operations Management, Supplement C: Special inventory models, pp.365 – 372
- PP-presentation: PLP\_Inventory management
- SQ Inventory management

### **Lecture 9 – Scheduling**

- Operations Management, Ch. 15, pp.541 – 548
- Hand out: Scheduling
- PP-presentation: PLP\_Scheduling
- SQ Scheduling

### **Lecture 10 – Material Requirement Planning, Master Production Scheduling, Kanban**

- Operations Management, Ch. 16, pp.563 – 587
- Operations Management, Ch. 8: Kanban, pp.310 – 312
- Hand out: MRP
- PP-presentation: PLP\_MPS + MRP + Kanban

## Literature study

During the course, the students should perform a literature study, individually or in pairs. The study should be performed in a scientific way and not only summarize literature, but analyze and draw conclusions from the studied literature. The study should be documented in a report of 25000 – 35000 characters, reference list not included. It should include a minimum of 15 scientifically sound references. Further it should be formatted according to a provided template. Further instructions on how to perform the study will be given in lecture 2.

Example of topics for the literature study:

- Flexibility in production
- Green supply chains
- Strategic sourcing
- Batch size optimization
- Spare parts logistics
- Strategic issues in logistics
- Strategic issues in production
- Supplier evaluation methods
- Other related topics (after approval from Antti)

The report will be evaluated based on the following criteria:

- Language: 1 – 5
  - Spelling
  - Grammar
- Structure: 1 – 5
  - Follow the template
- Reference handling: 1 – 5
  - Use Harvard system
  - No theories without multiple references
- Relevance of references: 1 – 5
  - Scientific
  - Up to date
  - Within the field
  - Sufficient amount
    - Minimum 15 references
    - At least 12 scientific articles/papers
- Quality of analysis 1 – 5
  - Draw conclusions from the study
  - Clear links between analysis, scope, and literature

A minimum score of 2 in any of the categories is required to pass the assignment.

The literature studies that have met the deadline and passed without corrections, will get bonus points on the written exam. The integer, closest to the average score, sets the bonus points to be used in the ordinary written exam in January 2016.

The literature study is much more time demanding than the 1.5 credits may indicate, at least if you are less experienced in academic writing.