

35E00750

Logistics Systems and Analytics

6 ECTS

TENTATIVE SYLLABUS

Version 18.10.2023

Instructor's contact information	Course information
<p>Dr. Tri Tran Assistant Professor (tenured) of Operations Management Faculty of Economics and Business University of Groningen, the Netherlands Email: tri.tran@aalto.fi Phone: +31 50 36 36326 Room: by appointment Meeting: by appointment https://www.rug.nl/staff/tri.tran/</p>	<p>Information and Service Management Master's elective program (2020-2022) Language of Instruction: English Lecture time: See schedule Location: See schedule Teaching Assistant: Teemu Valminen, PhD candidate Email: teemu.valminen@aalto.fi</p>

1. OVERVIEW

The course topics include an overview of logistics systems and analytics, definitions of logistics and supply chains, modes of transport and modal choices, warehousing and materials handling last-mile logistics and technologies, and risk management in logistics. The course also deals with designing a logistics network using analytics methods and develops an understanding of inventory models and strategies for warehousing decisions.

2. PREREQUISITES

No prerequisites are required. However, the following course is recommended:

- 35A00310 Tuotantotalouden Perusteet
- 35C04000 Global Logistics and Distribution Networks

3. LEARNING OUTCOMES

The course is intended to provide the student with an understanding of various management, expert, and analytical tasks in logistics systems in the context of the supply chain. After the course, the students are expected to learn how the logistics system operates in a supply chain, and how technologies including information systems provide a competitive advantage for companies. The student will also learn different issues and material handling in warehousing management. Besides the theoretical concepts, the course gives the students a basic knowledge of analytics methods and techniques that they can apply to logistics planning and design.

4. ASSESSMENT / GRADING

Exam: 40%

Individual: 30%

1. Supply chain fit (15%)
2. Lyft vs. Uber (15%)

Group: 30%

1. Zappo.com (15%)
2. The Fresh Connection (15%)

The final grade in this course will be based on the exam and individual and group case reports. For details on the instructions for each assignment, please see the “Assignments” section on MyCourses. Final course grade based on overall performance^(*):

90-100%	5
80-89%	4
70-79%	3
60-69%	2
50-59%	1
0-49%	0

^(*) 1% extra is given to students who respond to the course feedback.

5. READINGS

List of recommended pre-readings (to be updated)

Session 1: Understanding supply chains

- Lambert, D. M. (2004). The eight essential supply chain management processes. *Supply Chain Management Review*, 8(6), 18-26.

- Olavson, T., Lee, H., & DeNyse, G. (2010). A Portfolio Approach to supply chain design. *Supply Chain Management Review*, 14(4), 20-27.

Session 2: Achieving supply chain fit

- Fisher, M. L. (1997). What is the right supply chain for your product? *Harvard Business Review*, 75, 105-117.
- Wagner, S. M., Gross-Ruyken, P. T., & Erhun, F. (2012). The link between supply chain fit and financial performance of the firm. *Journal of Operations Management*, 30(4), 340-353.

Session 11: Logistical drivers and metrics

- Davis, T. S., & Novack, R. A. (2012). Why metrics matter. *Supply Chain Management Review*, 16(4), 10-17.
- Stank, T., Pellathy, D. A., & Dittmann, J. P. (2019). The key to the C-Suite? Shareholder value. *Supply Chain Management Review*, 23(5), 37-42.

6. PRELIMINARY SCHEDULE

Session	Date	Tentative Topic	Note	Location
Part 1. Background				
1	Thursday 26.10.2023	Course Overview + Understanding supply chains	Finding your group	R038/V001 Jenny ja Antti Wihurin rahasto
2	Friday 27.10.2023	Achieving supply chain fit		R028/F102 F102 Ryhmäopetus
3(*)	Monday 30.10. 2023	Mathematical programming for Logistics and SCM	The Fresh Connection (TFC) simulation: Round 1 starts	R038/U006
4	Wednesday 01.11. 2023	Guest speaker: Janne Kilpua		R038/T004
Part 2. Transportation				
5	Friday 03.11.2023	Urban logistics	Deadline (DL) Noon: Supply chain fit	R028/Q201 Q201 Ryhmäopetus
6(*)	Monday 06.11.2023	Vehicle routing problems	2pm: The Fresh Connection (TFC) simulation: Round 1 closes / Round 2 starts	R038/U006
Part 3. Facilities				

Session	Date	Tentative Topic	Note	Location
7	Wednesday 08.11.2023	Warehousing technologies		R038/T004
8	Friday 10.11.2023	Guest speaker: Teemu Oittinen (Konecranes)	DL. Noon: Lyft vs. Uber: Is Lyft being “woke” enough to beat Uber?	R028/Q201 Q201 Ryhmäopetus
	Monday 13.11.2023		2pm: TFC: Round 2 closes / Round 3 starts	
9(*)	Wednesday 15.11. 2023	Facility location problems	DL. Noon: Zappos.com Inc. and the warehouse decision	R038/T004

Part 4. Data

10	Thursday 16.11.2023	Digital logistics		R038/V001 Jenny ja Antti Wihurin rahasto
11	Friday 17.11.2023	Logistical drivers and metrics		R028/Q201 Q201 Ryhmäopetus
	Monday 20.11.2023		2pm: TFC Round 3 closes	
12	Monday 04.12.2023	***NO LECTURE***	DL. Noon: The Fresh Connection report	
EXAM	[add date and time] 09:00-12:00			

(*) Please bring your computers with you during these sessions.

7. COURSE WORKLOAD

Classroom hours	24h
Class preparation and assignments	133h
Exam	3h
Total	160h (6 cr)

8. ETHICAL RULES

[Aalto University Code of Academic Integrity and Handling Violations Thereof](#)

9. OTHER ISSUES

- Registration to course (sisu)
- Course Policies
- Retrieving Course Materials
- References
- Rubrics