Tallinn University of Technology
School of Business and Governance

TMJ0230 Logistics and inventory management

Extended syllabus
Spring 2023

Course aims:	1. To develop multidimensional understanding of the nature of logistics, scope and role, challenges and value creation, analytical concepts and various priorities in the context of a firm and a supply chain. 2. To explain main questions of inventory management and analytical approaches and to develop ability to reach context-specific inventory management goals and analyse the impact. 3. To develop skills to work in the field of logistics operations and to develop team-working capabilities.
Learning outcomes:	The student: Explains terminology and concepts of business logistics and analyses relationships between concepts, logistics practice and other business functions. Analyses logistical performance of company supply chains and the situation of inventory management, identifying bottlenecks and improvement priorities. Communicates and discusses fluently the relevant concepts and analytical views.
Brief description of the course (topics):	The nature of logistics and perspectives. Global challenges in logistics. Challenges in business logistics. Logistics contribution to value generation and impact to competitive position. Component areas of business logistics and dependencies. Logistics management as a management of flows. The role of information and information systems in logistics. Logistics performance measurement. Perfect order. SCOR metrics. Service quality gap analysis. The components and types of costs in logistics, total cost concept. Logistics development drivers and trends in economic and business environment. Conceptual evolution of business logistics. Push and pull logistics. Lead-time gap. Supply chain decoupling points. Supply chain management as extension of logistics. Supply chain mapping and analysis, lead time compression. Transport arrangements and optimization. Incoterms. Carrier, forwarder liability. Logistics outsourcing. Inventory role and reasons. Relations to manufacturing and purchasing. Service level strategy. Inventory control. Inventory management principles. Forecasting. Safety stock. Optimal order quantity. Inventory related costs. Replenishment systems. MRP-based planning. Inventory performance analysis. ABC-XYZ analysis. Stockout impact and measurement. Inventory role in a variety of supply chain improvement concepts. LEAN and AGILE logistics. Just-in-time logistics and Toyota Production System. Theory of Constraints. Bullwhip effect and ways to alleviate the impact. Quick Response logistics. Vendor Managed Inventory. Logistics improvement and effect to RoA.
Language of the course:	English
ECTS credits:	6 ECTS
Students:	This is a compulsory course for students studying on TVTB programme. Guests from other programme or via Erasmus are most welcome to join.
Special needs:	Persons with disabilities can participate in this course. Please inform the professor(s) as soon as possible regarding any special instruction, or assessments of this course that may be necessary to enable you to fully participate in this course.

Registration:	Students who would like to take the course should declare the course in the ÕIS (Student Information System) by deadlines set in the academic calendar.
Prerequisite courses and/or knowledge:	None. Basic introductory course, suitable as elective for anyone interested.
Prerequisite resources:	A laptop is rather handy for most seminars.
Teacher:	Tarvo Niine tarvo.niine@taltech.ee
Schedule for classes:	12 weeks, one 90 min lecture, one 90 min seminar.
Study process description:	Even though there are face-to-face lectures, the material is pre-recorded and can be accessed without limitations throughout the course. Most seminars require preparation in advance, often working in small groups. Details specified on Moodle.
Course's e-support:	Course has full Moodle support. https://moodle.taltech.ee/course/view.php?id=30981 Students are enrolled on the course using a key obtained in first lesson.
Study literature:	Harrison, A.; van Hoek, R. "Logistics Management and Strategy" + various reading materials available on Moodle
Continuous assessment:	Our course has multiple homework tasks specified in detail on Moodle, which altogether contribute 48% to the final grade, leaving 52% for the final exam. The most sizeable homework is an individual paper + presentation on a topic selected from a pre-defined list. The choice of topic will be open in the beginning of the course. Presentations are scheduled to take place on final four seminar weeks. The result contributes 15% to the final grade. The paper is due at the beginning of week #9.
Exam:	Our exam is built around three pillars: lecture materials, seminar topics and referenced individual reading material from various sources. The exam is online and open-book, 90 minutes, mostly consisting of short open questions with a smaller section of multiple choice. There will be three exam days to choose from and require registration on OIS. Exam is strictly individual. The exam mostly expects students to explain terminology and relate concepts with various contexts. The exam, due to open-book nature, is not primarily designed to be a memory exercise rather than expression of analytical understanding.
Final grade:	Homework tasks running mostly weekly through the semester contribute 48% to the final grade, leaving 52% for the final exam. The sum of points for each item is converted into a grade using the following principles: "5" excellent 91-100; "4" very good 81-90; "3" good 71-80; "2" satisfactory 61-70; "1" poor 51-60; "0" fail less than 51.
Academic integrity:	As a student at TalTech School of Business and Governance, you have an obligation to conduct your academic work with honesty and integrity according to University standards. It is expected that all work that you submit will be your own, and that you have actually done the work that you are submitting. Plagiarism and cheating will not be tolerated. Should you be found to be guilty of such activities, it will be followed with grade "0" for the assignment/exam and a notice will be filed to the School's Committee for Handling Violations of Academic Practice and Contemptible Behaviour. Depending on the Committee's proposal, it may lead to Dean issuing a letter of reprimand or in case of repeated or very severe misconduct, exmatriculation from the University. More importantly, cheating is not cool.

Schedule and topics

Seminars are designed to be independent units – every seminar has a new topic. More specifically – check Moodle.

The lectures are composed around three major thematic blocks:

1. Introduction. Logistics challenges. Problems. Perspectives. Logistics as a source of competitive advantage. Logistics technological and transport perspective.
2. Supply chain analysis. Lead time. Inventory turnover. Decoupling points. JIT logistics.
3. Inventory management concepts. Process control and the role of cooperation in supply chain.