



## RTU Course "Supply Chain Network Management Technologies"

12111 Modelēšanas un imitācijas katedra

### General data

Code	DMI704
Course title	Supply Chain Network Management Technologies
Course status in the programme	Compulsory/Courses of Limited Choice
Course level	Post-graduate Studies
Course type	Academic
Field of study	Computer Science
Responsible instructor	Jūlija Petuhova
Volume of the course: parts and credits points	1 part, 4.0 Credit Points, 6.0 ECTS credits
Language of instruction	LV, EN
Possibility of distance learning	Not planned
Abstract	The course "Supply Chain Network Management Technologies" focuses on essential technologies for effective supply chain networks (SCN) management. It emphasizes the strategic, tactical and operational issues along with the applications of quantitative/qualitative models for decision support in supply chains networks. It explains supply chains' performance measurement methods and tools. Supply chain networks' concepts and best practices are considered as well. Students are introduced to the supply chain reference model and show how to customize the supply chain reference model for the particular needs of a company based on its supply chain strategy. The course is taught through traditional lectures combined with seminars. Simulation based case studies and business games are used for promoting students hand on skills.
Goals and objectives of the course in terms of competences and skills	The goal of the course is to promote students competences and skills for effective and well-grounded decision making in SCN management by applying the appropriate technologies. Following are course outcomes: understanding specific supply chain management terminology, identifying SC strategies, concepts and technologies, understanding SC modelling approaches, notations as well as performance metrics. The course promotes these competences: analysing SC requirements, managing information in supply chains, identifying strengths and weaknesses through comparison with best practices, as well as applying the appropriate technology for decision making in SCN management.
Structure and tasks of independent studies	Independent work is aimed at developing students' ability in applying their theoretical knowledge to the specific problem solving in supply chain network management. Independent work includes both analytical tasks like writing literature reviews on a certain topic within the course subject, and practical work on analysis of a variety of case studies related to main issues in supply chain network management.
Recommended literature	<ul style="list-style-type: none"> <li>•M. Christopher, Logistics and Supply Chain Management. 3rd Edition, Prentice Hall, 2005</li> <li>•S. Robinson, Simulation: The Practice of Model Development and Use. England, John Wiley&amp;Sons Ltd, 2007</li> <li>•D. J. Bowersox, D.J. Closs, M. B. Cooper, Supply Chain Logistics Management, 3rd Revised Edition, McGraw Hill Higher Education, 2009</li> <li>•D. Simchi-Levi, P.Kaminsky, Ed.Simchi-Levi, Designing and Managing the Supply Chain, 3rd Edition, McGraw Hill, 2008</li> <li>•M. Laguna, J. Marklund. Business Process Modeling, Simulation, and Design. Pearson Prentice Hall, New Jersey, 2004, 415. p.</li> </ul>
Course prerequisites	Basics of logistics and supply chain management

### Course outline

Theme	Hours
Supply Chain Modelling and Performance Measurement: Methods and tools	4
Supply Chain Modelling and Performance Measurement: Reference models (incl. SCOR)	4
Supply Chain Modelling and Performance Measurement: Measurement and metrics	4
Supply Chain Modelling and Performance Measurement: Dynamic effects (Bullwhip)	4
Supply Chain Modelling and Performance Measurement: Supply chain benchmarking	4
Concepts and best practices: Lean vs Agile Supply Chains	2
Concepts and best practices: Mass Customization	2
Concepts and best practices: Replenishment Concepts (JIT/ECR/CPFR)	4
Concepts and best practices: Make-or-Buy Decisions / Outsourcing	4
Practical assignments and case studies	32

### Learning outcomes and assessment

Learning outcomes	Assessment methods
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Ability to select and apply the appropriate technology for obtaining solutions for a variety of supply chain network management and design problems	Practical Assignments: working on case studies students demonstrate critical thinking skills in identifying supply chain problem, as well as they are able to offer a set of possible solutions along with a grounded explanation of the most appropriate technology in the particular case study.
Ability to distinguish supply chain modelling approaches and apply them to particular task solving in operational, tactical and strategic levels	Labs: students demonstrate understanding of different modelling approaches potentialities and corresponding tools functionality in supply chain network management.
Understanding of key drivers of supply chain performance and their inter-relationships with strategy and other functions	Exam: demonstrate critical thinking skills for decision making in SCM tasks by handling assumptions and inferences within problem and present a reasoned point of view on applying the technology of SCM.

***Study subject structure***

Part	CP	ECTS	Hours per Week			Tests		
			Lectures	Practical	Lab.	Test	Exam	Work
1.	4.0	6.0	2.0	1.0	1.0		*	