RTU Course "Decision Synthesis Principles and Practice in Logistics"

12111 Modelēšanas un imitācijas katedra

General data

Code	DMI716
Course title	Decision Synthesis Principles and Practice in Logistics
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	Gaļina Merkurjeva
Volume of the course: parts and credits points	1 part, 9.0 Credit Points, 13.5 ECTS credits
Language of instruction	LV, EN
Possibility of distance learning	Not planned
Abstract	The course explores special tools in the form of management simulation games that are used to assist in understanding different logistics and supply chain management issues and provide business simulation environment for learning decision synthesis principles and techniques. Logistics management means synthesis of decisions in different functional areas and their integration from a business strategy point of view. Students learn the key tradeoffs involved in making logistics decisions by using quantitative models and qualitative methods, as well as by developing and using different kinds of information systems to support problem solving and decision making in logistics and supply chain management (LSCM).
Goals and objectives of the course in terms of competences and skills	On completion of the course students are expected to understand, identify and analyse different management problems in logistics and supply chain management taking into account general management concepts, human resources, information systems (IS), economic and commercial aspects; know how to select and employ the right techniques and tools for decision making in LSCM; use and design different kinds of IS to support problem solving and decision making in LSCM. Students will be able to solve extended LSCM problems and design the concept of LSCM information system.
Structure and tasks of independent studies	The following management simulation games are involved: a computer-based game that focuses on internal logistics of a production company; a board game that focuses on general mechanism of a multi-echelon supply chain management, with a particular focus on supply chain dynamics and inventory management; a computer-based on-line game that focuses on different aspects of international logistics company management; and a dynamic management simulation game that focuses on operations research and decision sciences in industrial management that leads participants to learn basic functions of planning, organising and controlling, balancing between various specialised managerial functions.
Recommended literature	1. Stephen R. Watson, Decision Synthesis: The Principles and Practice of Decision Analysis, Cambridge University press, 1994. 2. Turban E., Aronson J.E., Liang. T.-P., Decision Support Systems and Intelligent Systems, 7th Edition, Pearson/Prentice Hall, 2004. 3. Chopra S., Meindl P., Supply Cain Management: Strategy, Planning and Operations, Pearson Education, 2007.
Course prerequisites	Business simulation environments in logistics and supply chain management

Course outline

Theme	Hours
Introduction	4
Key issues and concepts	8
Theoretical principles of decision synthesis in logistics and supply chain management	6
Managerial problems and integrated solutions in industrial management	10
Managerial problems and integrated solutions in logistics and supply chain management	8
Managerial problems and integrated solutions in international logistics management	6
Techniques and tools for decision analysis in logistics and supply chain management	6
Decision synthesis practice (based on business simulation games and environments)	96

Learning outcomes and assessment

Learning outcomes	Assessment methods
To be able to understand, identify and analyse different managerial problems in logistics and supply chain management.	Successfully performed assignments based on management simulation games.
To be able to select and employ the right techniques for decision analysis and synthesis in LSCM.	Successfully performed assignments based on management simulation games.
To be able to analyse and solve extended managerial problems of an international logistics company.	Successfully performed assignments based on management simulation games.

To be able to develop the main functional software components for business modelling, managerial decision-making and information support.	Demonstrated abilities to develop and integrate business models and IT tools to support problem solving and decision making in a business environment (successfully developed and presented IS prototype).
Able to work effectively as members of a team.	Demonstrated abilities to work team (successfully developed and presented group project).
Able to describe and interpret general concepts and methods of decision synthesis and their application aspects to problem solving in logistics and supply chain management.	Demonstrated ability to identify a specific subject and provide a reasoned explanation (Course exam).

Study subject structure

Part	CP	ECTS	Hours per Week			Tests		
			Lectures	Practical	Lab.	Test	Exam	Work
1.	9.0	13.5	3.0	0.0	6.0		*	