COURSE UNIT (MODULE) DESCRIPTION

Course unit (module) title	Code
LEAN AND QUALITY MANAGEMENT METHODS	

Academic staff	Core academic unit(s)
Coordinating: assist. prof. dr. Darius RUŽELĖ **Other:**	Management Department, Faculty of Economics and Business Administration

Study cycle	Type of the course unit
Second	**Compulsory**

Mode of delivery	Semester or period when it is delivered	Language of instruction
Classroom / distant	2th semester	English

Requisites	
Prerequisites:	**Co-requisites (if relevant):**

Number of ECTS credits allocated	Student's workload (total)	Contact hours	Individual work
5	130	32	98

Purpose of the course unit

Purpose: to develop knowledge, understanding and abilities to apply Lean and quality management methods in practice

General competences:

- is able to communicate fluently in writing and orally, to discuss relevant quality management issues, to provide clear and unambiguous quality management insights and expertise to the organisation
- is able to engage and collaborate with a wide range of stakeholders in the organisation in order to achieve mutually agreed objectives by applying quality management principles and methods such as Lean, etc.
- is able to keep up-to-date with the knowledge and practical skills acquired and to plan his/her professional career independently

Subject competences:

- is able to understand, analyse and evaluate theories in management, quality management, business process management and related fields and apply them in organisations to enhance their value creation, problem solving and continuous improvement
- is able to apply the principles and methodologies of continuous improvement and quality leadership in a variety of professional contexts
- is able to assess the performance and effectiveness of organisations and implement Lean tools

Learning outcomes of the course unit	Teaching and learning methods	Assessment methods
Knowledge of lean and quality management methods	Problem-based teaching, group discussion, study of video materials, practice-based tasks at the classroom, individual assignment.	Assignments at classroom, individual project, written exam.
Ability to understand the system of principles and methods		
Ability to predict outcomes of methods' application		
Ability to apply methods in practice		

Content	Contact hours							Individual work: time and assignments	
	Lectures	Tutorials	Seminars	Workshops	Laboratory work	Internship	Contact hours, total	Individual work	Tasks for individual work
1. Introduction: Learning and teaching practices. Lean and quality management methods in management.	1						**1**	**2**	Reading of scientific literature by list of academic discussion questions.
2. Lean management fundamentals: Lean philosophy, principles and methodology. Lean management system in the context of mass production. Lean in service and manufacturing sectors. Target costing and Kaizen costing. Lean organizational culture. Lean culture deployment challenges. Lean change management.	4		1				**5**	**10**	Sources: Liker, 2004, p. 10-233
3. Lean "wastology" and waste elimination methods: arrangement 5S, U-line, management of work-in-progress Chaku-Chaku, "milk run", overall equipment efficiency OEE, total preventive maintenance TPM, equipment changeovers SMED, Spagetti diagram, FIFO inventory management, Obeya, Shojinka, Takotei-Mochi.	2		1				**3**	**6**	Sources: Hirano, 2009, p. 145-236, p. 237-320; p. 497-540
4. Lean people and teamwork: Policy deployment Hoshin Kanri, Quality Circles QC, proposal system Kaizen Teian, Asaichi meetings, obtaining approval Nemawashi, visual management, Kanban board, multi-functional teams, cross training, decision-making Ringi. Problem - solving method A3.	4		1				**5**	**10**	Sources: Hirano, 2009, p. 387-414, p. 453-474
5. Lean "just in time" (JIT): Value stream mapping VSM, inventory management Kanban, Pull management, Takt time, production-leveling Heijunka, supply in proper sequence JIS, theory of constraints TOC.	2		1				**3**	**8**	Sources: Hirano, 2009, p. 321-386; p. 435-446; p. 475-496
6. Lean quality incorporation methods (jap. Jidoka): 7 quality control tools (7QC), "5 Why", defect prevention Poka-Yoke, standardized work SW, incorporated quality Tsukurikomi, Andon board, stop line, autonomation etc.	1		1				**2**	**6**	Sources: Hirano, 2009, p. 541-622, p. 623-654, p. 655-682
7. Lean continuous improvement (jap. Kaizen) principles and methods: Improvement cycles PDCA, PDSS, and PDSA, Kaizen Teian, 3P, learning by practicing Jishuken, horizontal deployment Yokoten, error recognition Hansei.	2						**2**	**4**	Sources: Liker, 2004, p. 261-281
8. Balanced Scorecard (BSC): Measurement and Management. Structure of BSC. Strategic performance indicators. Strategic management based on BSC. Maltz model of measures.	1		1				**2**	**6**	Sources: Kaplan, Norton, 1992, p. 71-79 Maltz et al., 2003, p. 187–204

9. Product quality: Concept and methods of product quality assurance. Methods for product design and development. Product development models: "Waterfall", "Stage-Gate", "Prototype", "Spiral". Reliability Engineering. Failure modes and effects analysis FMEA. N. Kno model. Benchmarking.	2		1				**3**	**6**	Sources: Hogstrom, 2011, p. 117-127 Galin, 2004, p. 122-130
10. Service quality methods: Service quality assurance methods. Complaints and conflict management. SERVQUAL, SERVPERF and other models for service quality assessment.	1		1				**2**	**4**	Sources: Jain, Gupta, 2004
Individual project: Preparation, presentation, and defense of an individual project at the class	2						**2**	**12**	
Exam: Preparation for the exam. Examination. Discussions and questions after the exam (questions on the examination, discussion about of learning process efficiency, about subject content and about practical benefits of the course material).	2						**2**	**24**	
Total	24		8				**32**	**98**	

Assessment strategy	Weight %	Deadline	Assessment criteria
Assignments at classroom	20	During the course	**Student' activity at classroom during lectures and seminars, carrying out practical tasks and engaging in discussions:** ○ 2 points – performs all practical assignments during the class, actively participates in discussions. ○ 1 point – performs some practical assignments, partly participates in discussions. ○ 0 points – does not perform practical assignments, does not participate in discussions.
Individual project	20	Scheduled during the course	**Individual project:** ○ 2 points - project is relevant and logical, consistent and comprehensive analysis is carried out, findings are genuine and justified, class is engaged during the defense; ○ 1 point - project structure lacks consistency, analysis isn't complete, findings are superficial, class is irrelevant during the defense; ○ 0 points – project is superficial/formal, findings are not presented, class isn't involved during the defense;
Exam (written)	60	At the end of the course	**Only students that defended an individual project may take the exam** The exam consists of 6 practical assignments similar to the assignments at the classes. Evaluation criteria are relevance and comprehensiveness. ○ 6 points - excellent knowledge. ○ 5 points - very good knowledge. ○ 4 points - good knowledge, minor mistakes. ○ 3 points - average knowledge, minor mistakes. ○ 2 points - poor knowledge, some mistakes. ○ 1 point - poor knowledge, fundamental mistakes. ○ 0 points - requirements not met.

Author (-s)	Publishing year	Title	Issue of a periodical or volume of a publication	Publishing house or web link
Required reading				
Liker, J. K.	2004	Toyota Way: 14 Management Principles		https://vietnamwcm.files.wordpress.com/2008/07/mcgraw-

		from the World's Greatest Manufacturer		hill-thetoyotaway-14managementprinciples.pdf
Hirano H.	2009	JIT Implementation Manual: The Complete Guide to Just-In-Time Manufacturing, 2th Ed, Vol.1-6.		ftp://ftp.icesi.edu.co/leonardo/Lean-Manufacturing/Lecturas/JIT-Implementation-Manual-1.pdf
Kaplan, R. S.; Norton, D. P.	1992	The Balanced Scorecard: Measures that Drive Performance.	Harvard Business Review, January–February, 71–79.	https://umei007-fall10.wikispaces.com/file/view/Kaplan%26Nortonbalanced+scorecard.pdf
Maltz, A. C.; Shenhar, A. J.; Reilly, R. R.	2003	Beyond the Balanced Scorecard: Refining the Search for Organizational Success Measures.	*Long Range Planning*, 36(2), 187–204.	DOI: https://doi.org/10.1016/S0024-6301(02)00165-6
Hogstrom, C.	2011	The theory of attractive quality and experience offerings.	The TQM Journal. Vol. 23, No. 2, p. 111-127.	https://doi.org/10.1108/17542731111110195
Galin, D	2004	Software Quality Assurance from Theory to Implementation		http://desy.lecturer.pens.ac.id/Manajemen%20Kualitas%20Perangkat%20Lunak/ebook/Software%20Quality%20Assurance%20From%20Theory%20to%20Implementation.pdf
Jain, S.; Gupta, G.	2004	Measuring Service Quality: SERVQUAL vs. SERVPERF Scales.	VIKALPA, 29 (2).	http://www.vikalpa.com/pdf/articles/2004/2004_apr_jun_25_37.pdf
Recommended reading				
Kamiske, G.F.	2013	Handbuch QM-Methoden.		München: Carl Hanser Verlag. http://files.hanser.de/Files/Article/ARTK_LPR_9783446443884_0001.pdf
Rother, M.; Shook, J.	2009	Learning to See: Value Stream Mapping to Add Value and Eliminate MUDA		https://eclass.duth.gr/modules/document/file.php/TME159/Mike%20Rother%20-%20Learning%20to%20See%20Version%201.2%20%28kanban%29_value%20stream%20lean.pdf
Hines, P.; Holweg, M.; Rich, N.	2004	Learning to evolve: A review of contemporary lean thinking.	*International Journal of Operations & Production Management*, 24 (10), 994-101.	http://www.emeraldinsight.com/doi/pdfplus/10.1108/01443570410558049
Fujimoto, T.	1999	The evolution of a manufacturing system at Toyota.		New York: Oxford University Press.