

Study program: Mechanical Engineering			
Type and level of studies: Master academic studies			
Course unit: Lean manufacturing			
Teacher(s) in charge: Macuzic Ivan, DJapan Marko			
Language of instruction: English			
ECTS: 6			
Prerequisites: Listen out the course: N/A			
Semester: <i>Summer semester</i>			
Course unit objectives			
The objective of the course is to introduce the basics of Industrial Processes Management, starting with the strategy and all the major parts of the Industrial Cycle, by exploring all the major phases including the time to delivery to the market by mentioning all major tools of world class companies.			
Course unit outcomes			
Understanding automotive industrial strategies (Lean/WCM/TPS) and key management and performance indicators; Understanding the key activities of the industrialization process in order to improve production and process engineering; Research methodologies and tools necessary for setting up and managing of the workplace, invested capital and supply chains through the "world class" approach; Understanding the aspects of the employment contract and introducing the approach to the concept of human resources management development in order to achieve a continuous improvement mechanism; Understanding health and safety at work requirements as well as aspects of safety and environmental protection in the "world class" approach			
Course unit contents			
<i>Theoretical classes:</i> Modern strategies in the automotive industry and key management indicators; The process of industrialization and early product management; Analysis of production systems and criteria for early process management; Analysis of the workplace system and (re)organization analysis; Maintenance Management Criteria; Total quality management and access to continuous improvement; Logistic systems and supply chain management. Cost of labor and human resources management in order to manage the workforce. Management criteria for the application of world-class production. Management of environment, safety and health at work.			
<i>Practical classes:</i> Application of theoretical knowledge and skills to solve real problems from the industry; Work in groups			
Literature			
1. J.P. Womack, D.T. Jones, D. Roos, The Machine That Changed the World, Sammons Carpenter, 1990, ISBN 978-0-7432-9979-4			
2. J. Stewart, The Toyota Kaizen Kontinuum – A Practical guide to implementing Lean, CRC Press, 2012, ISBN 978-1-4398-4604-9			
3. M. Rother, J. Stook, Learning to See, Lean Enterprise Institute, 1999, ISBN 978-0966784305			
Number of active teaching hours			Other classes:
Lectures: 2	Exercises:1.6	Other forms of classes: 0.4	Independent work: 1
Teaching methods			
Lectures, exercises, seminar papers, consultations, visits and lectures of experts from industry and industry			
Examination methods (maximum 100 points)			
Exam prerequisites:	No. of points:	Final exam:	No. of points:
Student's activity during lecture	5	oral/written examination	30
Practical classes	10		
Test(s)	35		
Individual work	20		
Grading system			
Grade	No. of points	Description	
10	91-100	Excellent	
9	81-90	Exceptionally good	
8	71-80	Very good	
7	61-70	Good	
6	51-60	Passing	
5	<51	Failing	