

<b>STUDY MODULE DESCRIPTION FORM</b>		
Name of the module/subject <b>Lean production and logistcs</b>		Code <b>1011105321011117651</b>
Field of study <b>Logistics - Part-time studies - Second-cycle</b>	Profile of study (general academic, practical) <b>(brak)</b>	Year /Semester <b>1 / 2</b>
Elective path/specialty <b>Corporate Logistics</b>	Subject offered in: <b>Polish</b>	Course (compulsory, elective) <b>elective</b>
Cycle of study: <b>Second-cycle studies</b>	Form of study (full-time,part-time) <b>part-time</b>	
No. of hours Lecture: <b>14</b> Classes: <b>-</b> Laboratory: <b>-</b> Project/seminars: <b>14</b>		No. of credits <b>5</b>
Status of the course in the study program (Basic, major, other) <b>(brak)</b>		(university-wide, from another field) <b>(brak)</b>
Education areas and fields of science and art <b>technical sciences</b> <b>Technical sciences</b>		ECTS distribution (number and %) <b>5 100%</b> <b>5 100%</b>
<b>Responsible for subject / lecturer:</b>  dr hab. inż. Łukasz Hadaś email: lukasz.hadas@put.poznan.pl tel. (61) 665 34 01 Wydział Inżynierii Zarządzania ul. Strzelecka 11 60-965 Poznań		
<b>Prerequisites in terms of knowledge, skills and social competencies:</b>		
1	<b>Knowledge</b>	The student knows the basic concepts related to the management of production
2	<b>Skills</b>	The student has the ability to perceive and interpret the phenomena occurring in the field of management
3	<b>Social competencies</b>	The student is aware of the impact of waste on the efficiency of the production system
<b>Assumptions and objectives of the course:</b> The aim of the course is present to students of Lean Management as a management concept. Students are expected to master the basic principles of Lean and the use tools of Lean Production in the improvement process.		
<b>Study outcomes and reference to the educational results for a field of study</b>		
<b>Knowledge:</b>		
1. Student characterized types of waste in the management system of enterprise - [K2A_W03] 2. The student explains the implementation of the lean approach in the area of production and logistics - [K2A_W05] 3. Student characterized idea of Lean and its basic concepts - [K2A_W09] 4. The student explains the concepts of value stream mapping - [K2A_W10] 5. The student characterized the basic tools of Lean Management - [K2A_W13] 6. The student describes the practice of supply Just-in-Time and Just-in-Sequence - [K2A_W18]		
<b>Skills:</b>		
1. The student can self-study to expand the ability to apply lean tools - [K2A_U05] 2. Students can design a process of analysis to evaluate the proposed solutions based on the tools of Lean Management - [K2A_U09] 3. Student can suggest improvements of the production process for waste elimination - [K2A_U16] 4. Students can design a logistical system using the tools and techniques: milk runner, Kanban and 5S - [K2A_U17]		
<b>Social competencies:</b>		
1. The student is aware of their responsibility for their own work and the willingness to subordinate with the rules of teamwork and take responsibility in the group of project - [K2A_K03]		

<b>Assessment methods of study outcomes</b>		
<p>Formative assessment:</p> <p>a) For the project: on the basis of progress in the implementation stages of the project, and knowledge of the issues necessary to carry</p> <p>b) for the lecture: on the basis of answers to questions about the topics covered in previous lectures</p> <p>Recapitulative assessment:</p> <p>a) For the project: on the basis of (1) the quality of the project (2) answers to questions about the project b) for the lecture: on the basis of colloquium - written work on the issues discussed during the lecture. The exam can be applied after obtaining the ratings of the project and the laboratory. The exam is passed, after giving the correct answers to most questions</p>		
<b>Course description</b>		
<p>Lectures:</p> <p>Presentation of the origins of Lean management, history of development of the Toyota Production System (TPS)</p> <p>Tools and conceptions: Open-book management, kanban, TPM - Total Productive Maintenance</p> <p>Multi-process handling, Single-Piece Flow (continuous flow), 5S, 5W1H, Visual Management, Kaizen, Poka-Yoke</p> <p>The steps to implement Lean Production: Specify Value; Identify the Value Stream, Flow, Pull, Perfection.</p> <p>Organization of the work on the principles of 5S and standardized work. Techniques for mapping of business processes. Single Minute Exchange or Dies (SMED).</p> <p>Projects / classes:</p> <p>Value Stream Mapping. Current and future stage,</p> <p>Separation of value streams, production takt time calculation, Yamazumi chart,</p> <p>Internal logistics: layout, milk runner, kanban. Stock management,</p> <p>Flow control of material flow in the production hall (decision-making game)</p> <p>Didactic methods:</p> <p>Information lecture, problem lecture, exercise method, decision game</p>		
<p><b>Basic bibliography:</b></p> <ol style="list-style-type: none"> <li>Hadaś Ł., Cyplik P., TOC i Lean Production, Idea, narzędzia, praktyka zastosowania, Wydawnictwo Politechniki Poznańskiej, Poznań, 2013</li> <li>Liker J. K., Droga Toyoty. 14 zasad zarządzania wiodącej firmy produkcyjnej świata, MT Biznes, Warszawa 2005</li> <li>Womack J. P., Jones D. T., Odchudzenie firm ? eliminacja marnotrawstwa- kluczem do sukcesu, Centrum Informacji Menedżera, Warszawa 2001.</li> <li>Rother M., Shook J., Naucz się widzieć. Eliminacja marnotrawstwa poprzez mapowanie strumienia wartości, Wrocław Center for Technology Transfer, Wrocław 2003.</li> </ol>		
<p><b>Additional bibliography:</b></p> <ol style="list-style-type: none"> <li>Hadaś Ł., Fertsch M., Cyplik P., Planowanie i sterowanie produkcją, Wydawnictwo Politechniki Poznańskiej, Poznań, 2012</li> <li>Womack J.P., Jones D.T., Lean Thinking - szczupłe myślenie. Eliminowanie marnotrawstwa i tworzenie wartości w przedsiębiorstwie, ProdPress.com, Wrocław 2008.</li> </ol>		
<b>Result of average student's workload</b>		
Activity	Time (working hours)	
1. Lecture	14	
2. Project	14	
3. Own study/work	52	
4. Consultations	10	
5. Preparation for the course credits	35	
<b>Student's workload</b>		
Source of workload	hours	ECTS
Total workload	125	5
Contact hours	38	2
Practical activities	14	1