

Card of Course

Description of course	
Code of course	WT
Name of course	Warehousing Technology
Version of course	2018/2019
A. Place of the course in system of studies	
Level of education	Intermediate
Form and mode of studies	Full-time studies
Field of studies	Transport
Profile of studies	General academic profile
Specialisation	Main field
Place of teaching of course	Faculty of Transport
Place of realization of course	Department of Transport Systems Engineering and Logistics
Coordinator of course	Konrad Lewczuk, dr hab. inż. Department of Transport Systems Engineering and Logistics, Faculty of Transport
B. General characteristic of the course	
Block of courses	Main field
Group of courses	General
Level of course	-
Status of course	Faculty with limited choice
Language of course	English
Nominal semester	-
Academic year	2018/2019
Preliminary requirements	No preliminary requirements
Limit of students	No limit
C. Effects of education and manner of teaching	
Purpose of course	Acquiring knowledge and basic analytic skills about warehousing: storage and material handling technologies
Effects of education	See Table 1.
Form of didactic studies and number of hours per week	
Lecture	20
Exercise type of course	-
Laboratory	-
Project type of course	-
Contents of education	Definitions, warehouse as an element of supply chain, classification of warehouses. Functional areas in warehouse and phases of warehousing process. Units of handling and standardization in material handling. Storage policies and technologies. Picking policies and technologies. Storage equipment, material handling equipment, Automated Guided Vehicles (AGV) and warehouse automation systems. Warehouse Activity Profiling and material slotting. Warehouse information flow (Warehouse Management System).
Methods of evaluation	1/ Written test in the last class. Test consists of open questions and multiple choice test questions. It is possible to improve the test result on an additional date. 2/ Individual design exercise.
Methods of verification of effects of education	See Table 1.
Exam	No

Literature	<p>[1] Bartholdi III J. J., Hackman S. T.: Warehouse & Distribution Science, Release 0.98, www.warehouse-science.com, Aug 2017.</p> <p>[2] Riccardo Manzini (ed.). Warehousing in the global supply chain: advanced models, tools and applications for storage systems, London etc.: Springer, 2012.</p> <p>[3] Jacyna M. (ed.), Wasiak M. (ed.), Gołębiowski P., Izdebski M., Jachimowski R., Jacyna-Gołda I., Kłodawski M., Lewczuk K., Pyza D., Szczepański E., Żak J., Warehouse designing and modeling with 3d visualization support. Index Copernicus International. Warsaw 2017.</p> <p>[4] Frazelle H. E. World-Class Warehousing and Material Handling, McGraw-Hill, 2002.</p>
Website of the course	No.
D. Student's activity	
Number of credits ECTS	5
Number of hours of student's job for achievement of education's effect (description):	20 hours – lectures and tests 50 hours – reading related materials and own work 25 hours – realizing recommended exercises 5 hours – consultations
Number of credits ECTS on the course with direct participation of academic teacher	1,5
Number of credits ECTS on practical activities on the course	3,5
E. Additional information	
Notes	-
Date of last edition	2018/05/17

Table 1. General academic profile

Course's effects		Field effects	Area effect
Knowledge			
Effect:	Student has a basic knowledge about industrial and distribution warehouses and warehousing processes	Tr1A_W08	T1A_W03 T1A_W05
Code of effect:	W_01		
Verification:	Written test		
Effect:	Student has a knowledge about organization and technologies of material handling and storage	Tr1A_W09	T1A_W04 T1A_W05 T1A_W08
Code of effect:	W_02		
Verification:	Written test		
Skills			
Effect:	Student can design simple warehousing process and select material handling technologies	Tr1A_U11 Tr1A_U23	T1A_U09 T1A_U16
Code of effect:	U_01		
Verification:	Written test and project evaluation		
Effect:	Student can design layout of a simple warehouse facility	Tr1A_U20	T1A_U14
Code of effect:	U_02		
Verification:	Written test and project evaluation		
Social competences			
Effect:	---		
Code of effect:	---		
Verification:	---		

Approved by

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