



## Subject card

Subject name and code	Warehouse Storage Techniques, PG_00060678						
Field of study	Transport and Logistics						
Date of commencement of studies	October 2023	Academic year of realisation of subject			2025/2026		
Education level	first-cycle studies	Subject group			Optional subject group Subject group related to scientific research in the field of study		
Mode of study	Full-time studies	Mode of delivery			at the university		
Year of study	3	Language of instruction			Polish		
Semester of study	6	ECTS credits			4.0		
Learning profile	general academic profile	Assessment form			assessment		
Conducting unit	Zakład Projektowania Okreту -> Institute of Ocean Engineering and Ship Technology -> Faculty of Mechanical Engineering and Ship Technology						
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. inż. Jakub Montewka					
	Teachers						
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	0.0	0.0	30.0	0.0	60
	E-learning hours included: 0.0						
Learning activity and number of study hours	Learning activity	Participation in didactic classes included in study plan	Participation in consultation hours		Self-study	SUM	
	Number of study hours	60	4.0		36.0	100	
Subject objectives	The aim of the subject is to familiarize with the basic knowledge of the process of storing goods and services related to them. The subject is designed to present the most important aspects in the field of supply chain management, domestic and international logistics of goods and services, the functioning of the warehouse market in Poland and Europe, the construction and equipment of warehouses, the operation of warehouses in the logistics process. An important element of the subject is a project in which the Student learns to design and equip the warehouse with its most important elements.						
Learning outcomes	Course outcome	Subject outcome			Method of verification		
	[K6_W08] has knowledge of the principles of sustainable development	The student is aware of the need to develop in a sustainable manner, taking into account a number of aspects related to a given system and the environment in which this system operates.			[SW3] Assessment of knowledge contained in written work and projects		
	[K6_U05] can formulate a simple engineering task and its specification in the field of design, maintenance and operation of transport means and systems	The student is able to prepare a simple project related to the construction or operation of a selected element and aspect of the transport system, being aware of the boundary conditions and limitations.			[SU3] Assessment of ability to use knowledge gained from the subject		

Subject contents	<ol style="list-style-type: none"> <li>1. Introduction to the subject</li> <li>2. The essence and importance of the warehouse and warehousing in a logistics system, supply chain management</li> <li>3. Logistic infrastructure and the warehouse market in Poland, the flow of information in logistics</li> <li>4. Types and kinds of warehouses, classification. Modal points in logistics. The functioning of the warehouse,</li> <li>5. Forms and types of warehouses (logistic, storage and distribution centers)</li> <li>6. Goods storage techniques. Processes in the warehouse, warehouse division, storage zones, construction and equipment of the warehouse</li> <li>7. Warehousing techniques. Forming cargo units in warehouses. Stocks and stock management. Cross-docking</li> <li>8. Warehouse processes. Division of warehouses, storage zones, construction and equipment of the warehouse</li> <li>9. Warehouse techniques and technical equipment of the warehouse</li> <li>10. automatic warehouses</li> <li>11. IT systems in warehousing</li> <li>12. Security in storage</li> </ol>											
Prerequisites and co-requisites												
Assessment methods and criteria	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 40%;">Subject passing criteria</th> <th style="width: 30%;">Passing threshold</th> <th style="width: 30%;">Percentage of the final grade</th> </tr> </thead> <tbody> <tr> <td>Lectures</td> <td>51.0%</td> <td>50.0%</td> </tr> <tr> <td>Project</td> <td>51.0%</td> <td>50.0%</td> </tr> </tbody> </table>			Subject passing criteria	Passing threshold	Percentage of the final grade	Lectures	51.0%	50.0%	Project	51.0%	50.0%
	Subject passing criteria	Passing threshold	Percentage of the final grade									
	Lectures	51.0%	50.0%									
Project	51.0%	50.0%										
Recommended reading	Basic literature	<ol style="list-style-type: none"> <li>1. Paweł Andrzejczyk, Paweł Fajfer, Ewa Rajczakowska, Podstawy logistyki w przykładach i ćwiczeniach, Instytut Logistyki i Magazynowania, 2020</li> <li>2. Daniel Chudzik Andrzej Szymonik, , Logistyka nowoczesnej gospodarki magazynowej, Difin 2018</li> <li>3. Cieśla Maria, Hat-Garncaz Grażyna, Opasiak Tadeusz, Nowakowski Piotr , Logistyka w łańcuchach dostaw. Wybrane zagadnienia, Wydawnictwo Politechniki Śląskiej 2017</li> <li>4. Jan Długosz, Nowoczesne technologie w logistyce, PWE 2017</li> <li>5. Gołemska Elżbieta, Majchrzak-Lepczyk Justyna, Bentyn Zbigniew , Logistyka usług, PWN 2017</li> <li>6. Michał Kłodawski, Modelowanie procesów magazynowych w zastosowaniu do oceny wydajności i bezpieczeństwa pracy w magazynach, Oficyna Wydawnicza Politechniki Warszawskiej</li> <li>7. Michał Kłodawski, Modelowanie procesów magazynowych w zastosowaniu do oceny wydajności i bezpieczeństwa pracy w magazynach, Oficyna Wydawnicza Politechniki Warszawskiej, Warszawa 2019</li> <li>8. Łapko Aleksandra, Wagner Natalia, Logistyka dystrybucji . Trendy - Wyzwania Przykłady, CeDeWu Sp. z o.o. 2019</li> <li>9. Richards Gwynne, Zarządzanie logistyką magazynową, Wydawnictwo Naukowe PWN, 2016</li> <li>10. Grzegorz Tarczyński, Optymalizacja procesów magazynowych, Wydawnictwo Uniwersytetu Ekonomicznego we Wrocławiu, 2019</li> </ol>										
	Supplementary literature	<ol style="list-style-type: none"> <li>1. Cieśla Maria, Hat-Garncaz Grażyna, Opasiak Tadeusz, Nowakowski Piotr , Logistyka w łańcuchach dostaw. Wybrane zagadnienia, Wydawnictwo Politechniki Śląskiej 2017</li> <li>2. Richards Gwynne, Zarządzanie logistyką magazynową, Wydawnictwo Naukowe PWN, 2016</li> </ol>										
	eResources addresses	Adresy na platformie eNauczanie:										
Example issues/ example questions/ tasks being completed												
Work placement	Not applicable											