



Subject card

Subject name and code	Logistics and storage, PG_00056145						
Field of study	Management and Production Engineering						
Date of commencement of studies	October 2021	Academic year of realisation of subject			2023/2024		
Education level	first-cycle studies	Subject group					
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 Technologii Maszyn i Automatykacji Produkcji -> Institute of Manufacturing and Materials Technology -> Faculty of Mechanical Engineering and Ship Technology						
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Aleksandra Wiśniewska					
	Teachers	dr inż. Sławomir Szymański dr inż. Aleksandra Wiśniewska					
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	0.0		0.0		60
Subject objectives	The student learns the goals and principles of the logistics system in the enterprise. By deepening the knowledge and performing simple exercises related to the analyzed areas of issues in the field of logistics and warehousing, the student can independently design a logistics system, starting from the development of a supply system and an optimized technological line, through the evaluation and selection of suppliers, and ending with efficient distribution.						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[K6_U06] when formulating and solving engineering tasks a student can see aspects of system management and organization of individual and as a team, taking into account the human factor, has necessary preparation for work in an industrial environment, and knows the rules and standards related to occupational health and safety	The student identifies the structural and functional relationships between the elements of the analyzed or designed system. The student is able to analyze material and information flows in a given system and is able to identify places generating losses in the value chain (value stream mapping). The student is able to determine the level of risk and indicate activities that reduce the level of risk or maintain the risk at an acceptable level.	[SU1] Assessment of task fulfilment [SU2] Assessment of ability to analyse information [SU3] Assessment of ability to use knowledge gained from the subject [SU4] Assessment of ability to use methods and tools
	[K6_U11] is able to identify and formulate simple engineering tasks related to the diagnostics of the technical condition of machines and devices using appropriate methods, techniques and tools	The student is able to determine the indicators and measures of equipment effectiveness and their impact on the stability and efficiency of the analyzed or designed logistics system or warehouse space.	[SU1] Assessment of task fulfilment [SU2] Assessment of ability to analyse information [SU3] Assessment of ability to use knowledge gained from the subject [SU4] Assessment of ability to use methods and tools [SU5] Assessment of ability to present the results of task
	[K6_W06] has knowledge of the life cycle of products and mechanical devices and systems, in the field of machine parts manufacturing techniques, as well as the possibilities and trends in the development of machines and production devices and process control	The student knows the types of products and the differences between managing a production company and managing a service company. Based on the acquired knowledge of production systems, the student knows the specificity of production processes as well as the principles, methods and tools of production control. Based on the acquired knowledge of production processes and technical and information resources, the student is able to select methods and tools for analysis, control and optimization ensuring high quality and efficiency of production control processes.	[SW1] Assessment of factual knowledge [SW3] Assessment of knowledge contained in written work and projects
	[K6_K03] is aware of the social role of a graduate of a technical university, understands the importance of non-technical aspects and effects of engineering activities including their impact on the environment and responsibility for decisions, sees the need to formulate and provide the public with information and opinions on the achievements of technology, correctly identifies and resolves dilemmas associated with the job of an engineer	The student understands the impact of his actions and decisions on the quality and safety of other people's work. The student is able to formulate messages (create reports, instructions and other documents) using standardization and visualization, so that the message created for the recipients is simple and understandable.	[SK3] Assessment of ability to organize work [SK4] Assessment of communication skills, including language correctness [SK5] Assessment of ability to solve problems that arise in practice [SK1] Assessment of group work skills
	[K6_W05] has systematized, theoretically founded knowledge of modelling the operation of production systems with various structures and forms of their organization and the analysis of production processes using computer simulation methods	The student knows and is able to identify the structures and forms of production. The student is able to analyze the goals of the designed object and choose the form of production organization and process parameters ensuring the achievement of the assumed goals. Student uses computer-aided analysis for troubleshooting and design objects: their structure and functional relationships.	[SW2] Assessment of knowledge contained in presentation [SW3] Assessment of knowledge contained in written work and projects

Subject contents	<p>Lectures</p> <ol style="list-style-type: none"> 1. Logistics - definitions and goals of logistics. Definitions. 2. Logistics system and process. Transport susceptibility of various types of goods. 3. Logistics: procurement, production, distribution. 4. Logistics infrastructure - material flow: types of warehouses; movement of goods through the warehouse; technical means used in the warehouse; methods of identifying commodity units; Pareto principle - scope of application; rules for arranging goods in the warehouse. 5. Logistic infrastructure - information flow: application of the probability theory; basic methods of inventory management (ABC / XYZ, EOQ, MRP, DRP, JIT). 6. Designing logistic systems and storage spaces. 7. Analysis of the effectiveness of logistics systems. 8. Provisions of EU Directives and provisions of technical supervision. <p>Project - example</p> <p>Optimization of logistics processes in a selected production or service company</p> <ol style="list-style-type: none"> 1. Responsibilities of employees 2. Company structure 3. Processes taking place in the enterprise 4. Process list (hierarchy) 5. Sales process card 6. Storage process card (storage of semi-finished products) 7. Procurement process card 8. Transport process card 9. Production process card 10. Complaint process card 11. Process improvement: <ul style="list-style-type: none"> • Storage process • Procurement process • Production process 									
Prerequisites and co-requisites	<p>Knowledge of issues related to project management and human resources.</p> <p>Knowledge of issues related to the basics of production and service management.</p>									
Assessment methods and criteria	<table border="1"> <thead> <tr> <th data-bbox="453 1529 796 1563">Subject passing criteria</th> <th data-bbox="799 1529 1142 1563">Passing threshold</th> <th data-bbox="1145 1529 1485 1563">Percentage of the final grade</th> </tr> </thead> <tbody> <tr> <td data-bbox="453 1565 796 1594">project</td> <td data-bbox="799 1565 1142 1594">60.0%</td> <td data-bbox="1145 1565 1485 1594">50.0%</td> </tr> <tr> <td data-bbox="453 1597 796 1626">tests</td> <td data-bbox="799 1597 1142 1626">60.0%</td> <td data-bbox="1145 1597 1485 1626">50.0%</td> </tr> </tbody> </table>	Subject passing criteria	Passing threshold	Percentage of the final grade	project	60.0%	50.0%	tests	60.0%	50.0%
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Recommended reading	Basic literature	<p>Szymonik Andrzej , Chudzik Daniel, Nowoczesna koncepcja logistyki produkcji, Difin 2020</p> <p>Rudawska Anna, Logistyka procesów produkcji, Wydawnictwa Komunikacji i Łączności WKŁ 2016</p> <p>Gwynne Richards, Zarządzanie logistyką magazynową, Wydawnictwo Naukowe PWN 2021</p> <p>Jacyna Marianna, Lewczuk Konrad, Projektowanie systemów logistycznych., PWN 2016</p> <p>Bukowski L., Zapewnienie ciągłości dostaw w zmiennym i niepewnym otoczeniu., WSB 2016</p> <p>Materials and articles provided by the teacher</p>
	Supplementary literature	<p>Wojewódzka-Król Krystyna , Rolbiecki Ryszard, Infrastruktura transportu. Europa, Polska teoria i praktyka, Wydawnictwo Naukowe PWN 2018</p> <p>Pfohl Hans-Christian, Zarządzanie logistyką. Funkcje i Instrumenty., Biblioteka logistyka 1998</p> <p>Skowronek Czesław, Sarjusz-Wolski Zdzisław, Logistyka w przedsiębiorstwie., PWE 2013</p> <p>Materials and articles provided by the teacher</p>
	eResources addresses	
Example issues/ example questions/ tasks being completed	<p>Choosing a storage strategy. Arrangement of goods in the warehouse in accordance with the storage strategy. Supplies management. Selection of technical equipment for optimal handling of the warehouse. Logistics objectives. Definitions. Transport susceptibility of various types of goods. Types of magazines. The flow of goods through the warehouse. Technical measures used in the warehouse. Methods of identifying commodity units. The Pareto principle - scope of application. Rules for arranging goods in the warehouse. Application of the probability theory. Basic inventory management methods: ABC / XYZ, EOQ, MRP, DRP, JIT. Provisions of EU Directives and provisions of technical supervision.</p>	
Work placement	Not applicable	