



Subject card

Subject name and code	Information Systems in Manufacturing, PG_00066752						
Field of study	Mechanical Engineering						
Date of commencement of studies	February 2024	Academic year of realisation of subject			2024/2025		
Education level	second-cycle studies	Subject group					
Mode of study	Full-time studies	Mode of delivery			e-learning		
Year of study	2	Language of instruction			English		
Semester of study	3	ECTS credits			2.0		
Learning profile	general academic profile	Assessment form			assessment		
Conducting unit	Zakład Ekoinżynierii i Silników Spalinowych -> Institute of Energy -> Faculty of Mechanical Engineering and Ship Technology						
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. inż. Jacek Kropiwnicki					
	Teachers	dr hab. inż. Jacek Kropiwnicki					
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	0.0	0.0	0.0	0.0	30
	E-learning hours included: 30.0						
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	30		0.0		0.0	30
Subject objectives	The course will provide the students with advanced knowledge in production manufacturing systems, which every company implements today, and they will understand modern block chain technology.						
Learning outcomes	Course outcome	Subject outcome			Method of verification		
	[K7_W11] possesses organized knowledge useful in understanding ex-technical conditioning connected with performing the profession of an engineer and taking it into consideration in engineering practice; possesses well-established knowledge within the range of intellectual property, management and organization of manufacturing processes, including the management and life-cycle of a product	The student knows production manufacturing systems, which every company implements today, and understands modern block chain technology.			[SW1] Assessment of factual knowledge		
	[K7_U02] is able to communicate in English in professional matters within the area of technical science and, particularly, of construction and operation of machines	The student is able to communicate in English while discussing production manufacturing systems, and modern block chain technology.			[SU1] Assessment of task fulfilment		
	[K7_K82] is equipped to participate actively in lectures, seminars and laboratory classes conducted in foreign language	Student jest przygotowany do aktywnego uczestnictwa w wykładach w języku obcym z zakresu systemów produkcyjnych i nowoczesnych technologii blockchain.			[SK2] Assessment of progress of work		

Subject contents	<p><b>Information Systems:</b> Production systems, Technological processes, Software framework; <b>Business Information Systems:</b> Business functions and processes, Basic Concepts of the Information System, The position of the information system in the decision-making process, Organizational aspects of information systems, Basic architectures and types of business information systems, Types of information systems, ERP, CRM, Using electronic business technologies - business information systems on the Internet, Knowledge management; <b>ERP (Enterprise Resource Planning) Systems:</b> Theoretical teaching, Introduction to enterprise-level systems, System integration, ERP system architecture, ERP system implementation strategies, Software and vendor selection, Post-implementation work, Organizational changes and process reengineering, Supply chain management, Customer relationship management; <b>Advanced Manufacturing and Block Chain technology:</b> Introduction to Blockchain Technology, Cryptographic Foundations, Blockchain Platforms and Ecosystems, Smart Contracts and Decentralized Applications, Blockchain Development Tools and Frameworks, Consensus Mechanisms and Protocols and Security, Use Cases and industry applications.</p>			
Prerequisites and co-requisites				
Assessment methods and criteria	Subject passing criteria		Passing threshold	Percentage of the final grade
	Test		55.0%	100.0%
Recommended reading	Basic literature	Production and Operations Management Systems By Sushil Gupta, Martin Starr, ISBN 9781466507333, <a href="https://www.amazon.com/Production-Operations-Management-Systems-Sushil/dp/1466507330">https://www.amazon.com/Production-Operations-Management-Systems-Sushil/dp/1466507330</a>		
	Supplementary literature	Production and Operations Management Systems By Sushil Gupta, Martin Starr, ISBN 9781466507333, <a href="https://www.amazon.com/Production-Operations-Management-Systems-Sushil/dp/1466507330">https://www.amazon.com/Production-Operations-Management-Systems-Sushil/dp/1466507330</a>		
	eResources addresses	Adresy na platformie eNauczanie: Information Systems in Manufacturing; group 2; 12.15-13.45; Mechanical Engineering, W, sem. 03, letni 24/25 (PG_00066752) - Moodle ID: 44070 <a href="https://enauczanie.pg.edu.pl/moodle/course/view.php?id=44070">https://enauczanie.pg.edu.pl/moodle/course/view.php?id=44070</a>		
Example issues/ example questions/ tasks being completed	<p>What is Master Production Scheduling plan?</p> <p>Differences between ERP and MRP systems?</p> <p>Name the steps that are involved in the Blockchain project implementation.</p> <p>What is the fork? What are some of the types of forking?</p>			
Work placement	Not applicable			

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