GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	INFORMATION AND KNOWLEDGE MANAGEMENT, PG_00061110		
Field of study	Management		
Date of commencement of studies	October 2025	Academic year of realisation of subject	2026/2027
Education level	second-cycle studies	Subject group	Obligatory subject group in the field of study 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	2	Language of instruction	Polish
Semester of study	3	ECTS credits	3.0
Learning profile	general academic profile	Assessment form	exam
Conducting unit	Department Of Management -> Faculty Of Management And Economics -> Wydziały Politechniki Gdańskiej		
Name and surname of lecturer (lecturers)	Subject supervisor	prof. dr hab. inż. Edward Szczerbicki	
	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	0.0	0.0	30

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	30	5.0	40.0	75

Subject objectives

Uses modern trends in the field of information and knowledge management and engineering in the era of knowledge-based intelligent systems and the semantic society

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K7_W02] understands the significance and interrelationships of key components describing economic processes, drawing on in-depth knowledge aligned with major developmental trends in scientific disciplines related to the field of studies.	explains the importance and interdependencies between the key factors of the modern concept of management based on knowledge and information	[SW1] Assessment of factual knowledge
[K7_U03] formulates research hypotheses and select appropriate methods for their verification using advanced it tools.	formulates research problems in the area of knowledge management choosing appropriate methods of solving them	[SU4] Assessment of ability to use methods and tools

Subject contents

Contemporary intelligent systems based on knowledge
The importance of experience in the formalization and representation of information and knowledge
Methods and techniques of artificial intelligence (AI) in modern intelligent decision support systems
Knowledge as a resource and its role in the semantic socjety
Knowledge representation
Management and knowledge engineering
The concept of experience collection (SOE) and decision DNA (DDNA)
Representation of knowledge through a set of experiences
Ontologies and semantic web
Trust and security and its role and importance in intelligent systems
e-Decision community concept
Challenges of the upcoming fourth industrial revolution (Industry 4.0) and the Internet of Things (IoT) in the area of intelligent management and information and knowledge engineering

Prerequisites and co-requisites

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
Oral exam	50.0%	100.0%

Recommended reading	Basic literature	E.Szczerbicki, C Sanin (Eds): *Knowledge Management and Engineering with Decisional DNA*, Springer-Verlag Intelligent Systems Reference Library, 2020, pp 260 https://doi.org/10.1007/978-3-030-39601-5 Huk, M., M. Maleszka, E.Szczerbicki: Intelligent Information and Database Systems: Recent Developments, Springer-Verlag Studies in Computational Intelligence, 2019 Cesar Sanin, Edward Szczerbicki, Experience Based Knowledge Representation for Internet of Things and Cyber Physical Systems with Case Studies, Future Generation Computer Systems, 2018, DOI: 10.1016/j.future.2018.01.062
	Supplementary literature	Zhang H., Sanin C., and E Szczerbicki, When Neural Networks meet Decisional DNA: A Promising New Perspective for Knowledge Representation and Sharing, Cybernetics and Systems: An International Journal 2016 Vol 47, DOI: 10.1080/01969722.2016.1128776, pp. 140-148 M. Bilal Ahmed, Cesar Sanin, Edward Szczerbicki,, Experience-based Decisional DNA (DDNA) to support product development, Cybernetics and Systems: An International Journal 2018 Vol 49, DOI: 10.1080/01969722.2017.1418743
	eResources addresses	Adresy na platformie eNauczanie:
Example issues/ example questions/ tasks being completed	What are the three main advantages of using simulation methods to support decision-making processes	
Work placement	Not applicable	

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