GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Expert Systems in Business, PG_00068600						
Field of study	Economic Analytics						
Date of commencement of studies	October 2025		Academic year of realisation of subject		2027/2028		
Education level	first-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	Part-time studies		Mode of delivery		at the university		
Year of study	3		Language of instruction		Polish		
Semester of study	6		ECTS credits		3.0		
Learning profile	general academic profile		Assessment form		exam		
Conducting unit	Department Of Informatics In Management -> Faculty Of Management And Economics -> Wydziały Politechniki Gdańskiej						
Name and surname of lecturer (lecturers)	Subject supervisor						
	Teachers						

Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	8.0	0.0	16.0	0.0	0.0	24
	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	24	5.0	46.0	75

Subject objectives	Uses expert systems supporting decision-making processes, designing solutions using inference mechanisms and knowledge bases

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[K6_U07] uses advanced information technologies to enhance data analysis and decision-making processes.	uses IT tools adequate to solve contemporary economic problems, including supporting decision-making processes	[SU5] Assessment of ability to present the results of task [SU4] Assessment of ability to use methods and tools [SU2] Assessment of ability to analyse information
	[K6_W02] possesses advanced knowledge of methods and techniques that enable precise formulation and effective problem solving.	identifies quantitative methods and information technologies appropriate to support the analysis of economic phenomena	[SW3] Assessment of knowledge contained in written work and projects [SW2] Assessment of knowledge contained in presentation

Subject contents	Introducing to expert systems - definition of basic concepts: data, information, knowledge, knowledge formalization; expert systems - classification, applications, construction and examples. Creation of expert systems - reasons, stages of design, types, advantages and disadvantages, acquiring knowledge; structure of the expert system - overview of components (knowledge base, inference machine, explanatory module, user interface). Knowledge representation - knowledge acquisition process, knowledge base, representation methods, knowledge representation languages. Complex methods of knowledge representation - semantic networks, predicates and resolution method, frames, neural networks, fuzzy sets and fuzzy logic, genetic algorithms, evolutionary programming, scenarios, the Delphi method. Information technologies supporting the construction of expert systems programming languages in logic - Prolog. Designing a simple rule-based expert system - market analysis, concept, knowledge base, project schedule, business case.

Prerequisites and co-requisites	

Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	exam in the form of a test	60.0%	20.0%
	laboratory	60.0%	80.0%

Recommended reading	Basic literature	Michalik, K. (2014). Systemy ekspertowe we wspomaganiu procesów zarządzania wiedza w organizacji. Katowice: Wydawnictwo Uniwersytetu Ekonomicznego w Katowicach. Niederliński, A. (2006). Regułowo-modelowe systemy ekspertowe rmse, Gliwice: Wydawnictwo Pracowni Komputerowej Jacka Skalmierskiego. Wakulicz-Deja, A., Nowak-Brzezińska, A., Przybyła-Kasperek, M., Simiński, R. (2018). Systemy ekspertowe. Warszawa: Akademicka Oficyna Wydawnicza EXIT,
	Supplementary literature	none
	eResources addresses	Adresy na platformie eNauczanie:
Example issues/ example questions/ tasks being completed	Types of expert systems Selected ways of knowledge representation Stages of creating an expert system	
Work placement	Not applicable	

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