GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	EXPERT SYSTEMS IN BUSINESS, PG_00058597		
Field of study	Economic Analytics		
Date of commencement of studies	October 2023	Academic year of realisation of subject	2025/2026
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		
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Anna Trzaskowska	
	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

Presentation of expert systems as tools aimed at supporting decision-making in organizations; acquiring theoretical and practical knowledge necessary to operate and design IT solutions using the knowledge inferencing mechanisms and knowledge base.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K6_W02] Demonstrates advanced knowledge of methods and techniques related to the field of study in economic analytics to explain complex problems.	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
[K6_U07] Applies advanced information technologies to enhance data analysis and decision-making processes.	uses IT tools adequate to solve contemporary economic problems, including supporting decisionmaking 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

Subject contents	1. Introduction to expert systems - definition of basic concepts: data, information, knowledge, formalization of knowledge; expert systems - classification, applications, construction and examples. 2. Creating expert systems - causes, design stages, types, advantages and defects, knowledge acquisition; structure of the expert system - discussion of components (knowledge base, requesting machine, explanatory module, user contact interface). 3. Knowledge representation - the process of knowledge acquisition, knowledge base, methods of representation, languages of representation knowledge. 4. Complex ways of knowledge representation - semantic networks, predicates and resolution methods, frameworks, networks neural, fuzzy sets and fuzzy logic, genetic algorithms, evolutionary programming, scenarios, the Delphi method. 5. Information technologies supporting the construction of expert systems - programming languages in logic - Prolog. 6. Designing a simple rule 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 - test	60.0%	20.0%
laboratory	60.0%	80.0%

Recommended reading	Basic literature	1. Michalik K., Systemy ekspertowe we wspomaganiu procesów zarządzania wiedza w organizacji, Wydawnictwo Uniwersytetu Ekonomicznego w Katowicach, Katowice 2014 2. Niederliński A., Regułowo-modelowe systemy ekspertowe rmse, Wydawnictwo Pracowni Komputerowej Jacka Skalmierskiego, Gliwice 2006 3. Wakulicz-Deja A., Nowak-Brzezińska A., Przybyła-Kasperek M., Simiński R., Systemy ekspertowe, Akademicka Oficyna Wydawnicza EXIT, Warszawa 2018
	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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