



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 (on-line)	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	<p>1. Introduction to expert systems - definition of basic concepts: data, information, knowledge, formalization of knowledge; expert systems - classification, applications, construction and examples.</p> <p>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).</p> <p>3. Knowledge representation - the process of knowledge acquisition, knowledge base, methods of representation, languages of representation knowledge.</p> <p>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.</p> <p>5. Information technologies supporting the construction of expert systems - programming languages in logic - Prolog.</p> <p>6. Designing a simple rule expert system - market analysis, concept, knowledge base, project schedule, business case.</p>											
Prerequisites and co-requisites												
Assessment methods and criteria	<table border="1"> <thead> <tr> <th data-bbox="456 972 794 1003">Subject passing criteria</th> <th data-bbox="799 972 1137 1003">Passing threshold</th> <th data-bbox="1142 972 1481 1003">Percentage of the final grade</th> </tr> </thead> <tbody> <tr> <td data-bbox="456 1010 794 1041">exam - test</td> <td data-bbox="799 1010 1137 1041">60.0%</td> <td data-bbox="1142 1010 1481 1041">20.0%</td> </tr> <tr> <td data-bbox="456 1048 794 1077">laboratory</td> <td data-bbox="799 1048 1137 1077">60.0%</td> <td data-bbox="1142 1048 1481 1077">80.0%</td> </tr> </tbody> </table>			Subject passing criteria	Passing threshold	Percentage of the final grade	exam - test	60.0%	20.0%	laboratory	60.0%	80.0%
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laboratory	60.0%	80.0%										
Recommended reading	<p>Basic literature</p> <p>Supplementary literature</p> <p>eResources addresses</p>	<p>1. Michalik K., Systemy ekspertowe we wspomaganiu procesów zarządzania wiedza w organizacji, Wydawnictwo Uniwersytetu Ekonomicznego w Katowicach, Katowice 2014</p> <p>2. Niederliński A., Regułowo-modelowe systemy ekspertowe rmse, Wydawnictwo Pracowni Komputerowej Jacka Skalmierskiego, Gliwice 2006</p> <p>3. Wakulicz-Deja A., Nowak-Brzezińska A., Przybyła-Kasperek M., Simiński R., Systemy ekspertowe, Akademicka Oficyna Wydawnicza EXIT, Warszawa 2018</p> <p>none</p> <p>Adresy na platformie eNauczenie:</p>										
Example issues/ example questions/ tasks being completed	<p>Types of expert systems</p> <p>Selected ways of knowledge representation</p> <p>Stages of creating an expert system</p>											
Work placement	Not applicable											