



Subject card

Subject name and code	Expert Systems in Business, PG_00037189						
Field of study	Economic Analytics						
Date of commencement of studies	October 2021	Academic year of realisation of subject			2023/2024		
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			blended-learning		
Year of study	3	Language of instruction			Polish		
Semester of study	6	ECTS credits			4.0		
Learning profile	general academic profile	Assessment form			assessment		
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	dr inż. Anna Trzaskowska					
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: 12.0						
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		8.0		68.0	100
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_U08] Has the ability to use mathematical and IT tools to analyse economic phenomena and make decisions by economic entities.		The student is able to select and use tools appropriate to the problems of modern management, in particular - to support managerial decisions in the organization			[SU4] Assessment of ability to use methods and tools	
	[K6_W02] Knows how to describe economic phenomena using quantitative methods with the use of IT tools.		Student characterizes quantitative methods and exchange technologies suitable for the support of the analyzed economic phenomena			[SW1] Assessment of factual knowledge	
	[K6_K01] Understands the need for continuous learning, improving professional, personal and social competences.		Students are aware of the high dynamics of changes in the economic environment and in the field of information technology to support management processes			[SK4] Assessment of communication skills, including language correctness	

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="454 1057 794 1088">Subject passing criteria</th> <th data-bbox="798 1057 1137 1088">Passing threshold</th> <th data-bbox="1141 1057 1482 1088">Percentage of the final grade</th> </tr> </thead> <tbody> <tr> <td data-bbox="454 1093 794 1124">laboratory</td> <td data-bbox="798 1093 1137 1124">60.0%</td> <td data-bbox="1141 1093 1482 1124">80.0%</td> </tr> <tr> <td data-bbox="454 1128 794 1160">test</td> <td data-bbox="798 1128 1137 1160">60.0%</td> <td data-bbox="1141 1128 1482 1160">20.0%</td> </tr> </tbody> </table>			Subject passing criteria	Passing threshold	Percentage of the final grade	laboratory	60.0%	80.0%	test	60.0%	20.0%
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laboratory	60.0%	80.0%										
test	60.0%	20.0%										
Recommended reading	Basic literature	<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>										
	Supplementary literature	none										
	eResources addresses	Adresy na platformie eNauczenie: Systemy Ekspertowe w Biznesie - N - 2023/2024 - Moodle ID: 31236 https://enauczenie.pg.edu.pl/moodle/course/view.php?id=31236										
Example issues/ example questions/ tasks being completed	Types of expert systems Selected ways of knowledge representation Stages of creating an expert system											

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