



Subject card

Subject name and code	Knowledge Bases and Decision Support Systems, PG_00059229						
Field of study	Automation, Robotics and Control Systems						
Date of commencement of studies	February 2024		Academic year of realisation of subject		2024/2025		
Education level	second-cycle studies		Subject group				
Mode of study	Full-time studies		Mode of delivery		at the university		
Year of study	1		Language of instruction		Polish		
Semester of study	2		ECTS credits		2.0		
Learning profile	general academic profile		Assessment form		assessment		
Conducting unit	Department of Control Engineering -> Faculty of Electrical and Control Engineering						
Name and surname of lecturer (lecturers)	Subject supervisor		dr inż. Robert Smyk				
	Teachers		dr inż. Robert Smyk				
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	0.0	15.0	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		4.0		16.0	50
Subject objectives	Acquainting with techniques of extracting information from knowledge bases. Elementary principles of building information systems with a knowledge base.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	K7_W05		Implements the selected ML method.		[SW3] Assessment of knowledge contained in written work and projects		
	K7_U07		Implements the selected functionality of the application.		[SU1] Assessment of task fulfilment		
	K7_K06		Carries out a design task within a specified scope.		[SK1] Assessment of group work skills		
	K7_U10		Knows selected classification algorithms.		[SU3] Assessment of ability to use knowledge gained from the subject		
Subject contents	1. Introduction to SWD: basic general issues, discussion where to get the data, where to store it, how to process it? 2. Data Acquisition: webscraping 3. Parsing-processing of JSON / XML data 4. Non-relational data container, such as Mongo DB 5. Building a model: data classification, property extraction 6. Building the model: algorytmy ML, fuzzy logic 7. Processing of linguistic data, NLP 8. Conclusion: building the application interface in web technology						
Prerequisites and co-requisites	He knows the basic calculation methods in the field of numerical methods. Has basic programming skills in a selected high-level language.						
Assessment methods and criteria	Subject passing criteria		Passing threshold		Percentage of the final grade		
	project		50.0%		50.0%		
	carrying out tasks during classes		50.0%		50.0%		

Recommended reading	Basic literature	<p>Richert, Willi. <i>Building machine learning systems with Python</i>. Packt Publishing Ltd, 2013.</p> <p>Dasgupta, Nataraj. <i>Practical big data analytics: Hands-on techniques to implement enterprise analytics and machine learning using Hadoop, Spark, NoSQL and R</i>. Packt Publishing Ltd, 2018. Ploetz, Aaron, et al. <i>Seven NoSQL Databases in a Week: Get up and running with the fundamentals and functionalities of seven of the most popular NoSQL databases</i>. Packt Publishing, 2018.</p>
	Supplementary literature	<p>Towards data science, https://towardsdatascience.com/, 2022</p> <p>Kaggle, https://www.kaggle.com/, 2022</p>
	eResources addresses	<p>Adresy na platformie eNauczanie: BAZY WIEDZY I SYSTEMY WSPOMAGANIA DECYZJI [ARISS] [2024/25] - Moodle ID: 39810 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=39810</p>
Example issues/ example questions/ tasks being completed	<p>Suggest a data storage container for loose structure documents.</p> <p>Suggest an algorithm for classifying unstructured data.</p>	
Work placement	Not applicable	

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