

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 2023		Academic year of realisation of subject			2023/2024			
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 El	ontrol Er	gineering				
Name and surname	Subject supervisor		dr inż. Robert Smyk						
of lecturer (lecturers)	Teachers	dr inż. Robert Smyk							
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	ory 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 classes include plan			Participation in consultation hours		Self-study SL		SUM	
	Number of study 30 hours		4.0		16.0 50		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 out	Subject outcome Method of verification							
	K7_U10		Knows selected classification algorithms.			[SU3] Assessment of ability to use knowledge gained from the subject			
	K7_K06		Carries out a design task within a specified scope.			[SK1] Assessment of group work skills			
	K7_U07		Implements the selected functionality of the application.			[SU1] Assessment of task fulfilment			
	K7_W05		Implements the selected ML method.			[SW3] Assessment of knowledge contained in written work and projects			
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				
	carrying out tasks during classes		50.0%			50.0%			
	project		50.0%			50.0%			

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Recommended reading	Basic literature	Richert, Willi. Building machine learning systems with Python. Packt Publishing Ltd, 2013. Dasgupta, Nataraj. Practical big data analytics: Hands-on techniques to implement enterprise analytics and machine learning using Hadoop, Spark, NoSQL and R. Packt Publishing Ltd, 2018.Ploetz, Aaron, et al. Seven NoSQL Databases in a Week: Get up and running with the fundamentals and functionalities of seven of the most popular NoSQL databases. Packt Publishing, 2018.		
	Supplementary literature	Towards data science, https://towardsdatascience.com/ , 2022 Kaggle, https://www.kaggle.com/ , 2022		
	eResources addresses	Adresy na platformie eNauczanie: BAZY WIEDZY I SYSTEMY WSPOMAGANIA DECYZJI [2023/24] - Moodle ID: 32236 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=32236		
Example issues/ example questions/ tasks being completed	Suggest a data storage container for loose structure documents. Suggest an algorithm for classifying unstructured data.			
Work placement	Not applicable			

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