



## 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, <a href="https://towardsdatascience.com/">https://towardsdatascience.com/</a>, 2022</p> <p>Kaggle, <a href="https://www.kaggle.com/">https://www.kaggle.com/</a>, 2022</p>
	eResources addresses	<p>Adresy na platformie eNauzanie:  BAZY WIEDZY I SYSTEMY WSPOMAGANIA DECYZJI [ARiSS]  [2024/25] - Moodle ID: 39810  <a href="https://enauzanie.pg.edu.pl/moodle/course/view.php?id=39810">https://enauzanie.pg.edu.pl/moodle/course/view.php?id=39810</a></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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