GDAŃSK UNIVERSITY OF TECHNOLOGY

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 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_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%

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