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 2025	Academic year of realisation of subject	2025/2026
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 -> Wydziały Politechniki Gdańskiej		
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Robert Smyk	
	Teachers		

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

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	

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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