GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Database Systems, PG_00038295						
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		4.0		
Learning profile	general academic profile		Assessment form		assessment		
Conducting unit	Faculty of Electrical and Control Engineering						
Name and surname of lecturer (lecturers)	Subject supervisor		dr inż. Robert Smyk				
	Teachers		dr inż. Daniel Wachowiak				

Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	0.0	15.0	0.0	0.0	45
	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	45	7.0	48.0	100

Subject objectives	Presentation of the purpose of databases. Description of the characteristics and construction of databases. Database design, selected rules. Relational and nonrelational BD. Getting to know the SQL language and writing queries in the SQL language. Data Manipulation Language. Data Definition Language. Data Query Language. Data mining.

Learning outcomes	Course outcome	Subject outcome	Method of verification
	K7_W05	Knows the basics of ML algorithms, fuzzy logic and forward reasoning	[SW3] Assessment of knowledge contained in written work and projects
	K7_U07	Develops independently the stages of solving a design task	[SU3] Assessment of ability to use knowledge gained from the subject
	K7_U10	Knows the use of basic algorithms for classifying and grouping data sets	[SU2] Assessment of ability to analyse information
	K7_K06	Can assess the formal correctness between relations	[SK5] Assessment of ability to solve problems that arise in practice

Subject contents	Databases rationale. Database characteristics. Relational data model. Indexing in relational databases. Programming in SQL Queries, projection, expressions, aliases. WHERE clause and logical conditions. HAVING, GROUP BY clauses and aggregating functions. Relation joins. Sub-queries. Adding and modifying records. Creating tables. Data mining.

Prerequisites and co-requisites	

Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Final test	60.0%	50.0%
	Introductory tests	60.0%	25.0%
	homeworks	60.0%	25.0%

Recommended reading	Basic literature	1. Chrisa Date, *Database in Depth* (OReilly) 2. MySQL Manual (http://dev.mysql.com/doc) 3. PostgreSQL Manual (http://www.postgresql.org/docs)
	Supplementary literature	1. Wiesław Dudek, 'Bazy danych SQL, Teoria i praktyka' 2. Michael J. Hernandez., "Bazy danych dla zwykłych śmiertelników" 3. Lynn Beighley, Head First SQL: Your Brain on SQL -- A Learner's Guide

	eResources addresses	Adresy na platformie eNauczanie: SYSTEMY BAZ DANYCH [ARiSS][2024/25] - Moodle ID: 39806 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=39806
Example issues/ example questions/ tasks being completed	List database features Give an example of database application in automatic control or robotics For a given set of relations, write a query using projections, expressions and aliases. For a given set of relations, write a query using join. For a given set of relations, write a query using subquery.	
Work placement	Not applicable	

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