GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Modern Database Systems, PG_00038333
Field of study	Automation, Robotics and Control Systems

Date of commencement of studies	October 2025	**Academic year of realisation of subject**	2026/2027
Education level	second-cycle studies	**Subject group**	Specialty subject group Subject group related to scientific research in the field of study
Mode of study	Part-time studies	**Mode of delivery**	at the university
Year of study	2	**Language of instruction**	Polish
Semester of study	3	**ECTS credits**	3.0
Learning profile	general academic profile	**Assessment form**	assessment

Conducting unit	Faculty Of Electrical And Control Engineering -> Wydziały Politechniki Gdańskiej
Name and surname of lecturer (lecturers)	Subject supervisor — prof. dr hab. inż. Grzegorz Redlarski Teachers

Lesson types and methods of instruction

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	10.0	0.0	10.0	0.0	0.0	20

E-learning hours included: 0.0

 Adresy na platformie eNauczanie:

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	20	8.0	47.0	75

Subject objectives	Intruduction of the data base rationale. Description of data base characteristics. Introduction to programing in SQL and writing SQL sueries. Data Manipulation Language. Data Definition Language. Data Query Language.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K7_W02] has a structured knowledge of the application of information systems to improve the reliability, efficiency, speed and mobility of control and management systems	The student is able to design and create a database, and present its documentation in the form of a multimedia presentation and / or text	[SW2] Assessment of knowledge contained in presentation [SW3] Assessment of knowledge contained in written work and projects
[K7_U10] is able to apply the known mathematical tools and methods and computer techniques to analyse and evaluate automation and robotics components, devices, systems and systems	The student is able to create a database using for this an appropriate / specialized IT tools	[SU1] Assessment of task fulfilment
[K7_K06] is aware of the impact of engineering activities on the quality of applied solutions and the environment		

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.
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	
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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