



## Subject card

Subject name and code	Database Systems, PG_00038295						
Field of study	Automation, Robotics and Control Systems						
Date of commencement of studies	February 2022	Academic year of realisation of subject			2022/2023		
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. Robert Smyk 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						
	K7_U07						
	K7_U10						
	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		
	homeworks	60.0%			25.0%		
	Introductory tests	60.0%			25.0%		
	Final test	60.0%			50.0%		
Recommended reading	Basic literature	1. Chris Date, <i>Database in Depth</i> (O'Reilly) 2. MySQL Manual ( <a href="http://dev.mysql.com/doc">http://dev.mysql.com/doc</a> ) 3. PostgreSQL Manual ( <a href="http://www.postgresql.org/docs">http://www.postgresql.org/docs</a> )					
	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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