Subject card

Subject name and code	Database Systems, PG_00038299					
Field of study	Automation, Robotics and Control Systems					
Date of commencement of studies	October 2022		Academic year of realisation of subject		2022/2023	
Education level	second-cycle studies		Subject group			
Mode of study	Part-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		exam	
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	10.0	0.0	10.0	0.0	0.0	20
	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	20	10.0	70.0	100

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	The student uses basic utility programs available in text mode and graphics mode to configure and administer the database system	[SW2] Assessment of knowledge contained in presentation
	K7_W05	The student knows of basic methods of extracting data from database	[SW1] Assessment of factual knowledge
	K7_U07	The student knows the principle of building a table in relational DB	[SU3] Assessment of ability to use knowledge gained from the subject
	K7_K06	The student knows the relational data model	[SK5] Assessment of ability to solve problems that arise in practice
	K7_U10	The student knows the basic concepts related to databases, knows the basic syntax of SQL	[SU1] Assessment of task fulfilment

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
	homeworks	60.0%	25.0%
	Final test	60.0%	50.0%
	Introductory tests	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:
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	