

。 GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Nonrelational databases, PG_00064003								
Field of study	Data Engineering								
Date of commencement of studies	October 2025		Academic year of realisation of subject			2027/2028			
Education level	first-cycle studies		Subject group			Optional subject group Subject group related to scientific research in the field of study			
Mode of study	Full-time studies		Mode of delivery			blended-learning			
Year of study	3		Language of instruction			Polish			
Semester of study	5		ECTS credits			6.0			
Learning profile	general academic profile		Assessment form			assessment			
Conducting unit	Department Of Software Engineering -> Faculty Of Electronics Telecommunications And Informatics -> Wydziały Politechniki Gdańskiej								
Name and surname	Subject supervisor		dr inż. Teresa Zawadzka						
of lecturer (lecturers)	Teachers		dr inż. Teresa Zawadzka						
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Projec	:t	Seminar	SUM	
	Number of study hours	15.0	0.0	30.0	30.0		0.0	75	
	E-learning hours included: 15.0								
Learning activity and number of study hours	Learning activity Participation ir classes include plan		I didactic Participation in ed in study consultation hours		Self-study SUM				
	Number of study hours	75		5.0		70.0		150	
Subject objectives	The aim of the course is to familiarize students with the basic types of non-relational databases.								
Learning outcomes	Course outcome		Subject outcome			Method of verification			
	[K6_W05] integrates data from multiple sources in order to analyze complex business problems		Student potrafi załadować dane do nierelacyjnej bazy danych.			[SW1] Assessment of factual knowledge [SW2] Assessment of knowledge contained in presentation			
	[K6_W07] analyzes business processes in an advanced way in the technical, legal, economic, financial and social context		The student can select the appropriate type of non-relational database for a specific business application.			[SW1] Assessment of factual knowledge			
	[K6_U07] uses information technologies to improve the acquisition, analysis and processing of data in business applications		The student can design, in accordance with the given specification (based on usage scenarios and competency queries resulting from business applications), a document, graph, and key-value database. In addition, the student can formulate and execute queries in languages (formulas/functions) specific to a given type of non-relational database.			[SU1] Assessment of task fulfilment [SU3] Assessment of ability to use knowledge gained from the subject [SU4] Assessment of ability to use methods and tools [SU5] Assessment of ability to present the results of task			

Subject contents	1. Introduction to NoSQL databases						
	- types of NoSQL databases						
	- introduction to distributed databases						
	- CAP						
	- BASE						
	2. Document databases - MongoDB						
	3. Key-value databases - Redis						
	4. Graph databases - Neo4J						
Prerequisites and co-requisites	Knowledge of relational databases.						
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade				
	Exam	50.0%	30.0%				
	Tasks	50.0%	35.0%				
	Project development	50.0%	35.0%				
Recommended reading	Basic literature 1. Professional NoSQL, Shashanki Tiwari, Wiley, 2011. 2. MongDB, The Definitive Guide, Kristina Chodorow, O'Reilly 3. Graph Databases: New Opportunities for Connected Dar Robinson and Jim Webber, O'Reilly 2015.						
	Supplementary literature	Documentation of NoSQL databases.					
	eResources addresses Adresy na platformie eNauczanie:						
Example issues/ example questions/ tasks being completed	s/ 1. Model NoSQL database (key-valu, document, graph) ions/ mpleted						
	2. Define and execute queries						
Work placement	Not applicable						

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