

Subject card

Subject name and code	Database applications, PG_00143573						
Field of study	Informatics						
Date of commencement of studies	October 2025		Academic year of realisation of subject		2026/2027		
Education level	Bachelor's studies		Subject group		Obligatory subject group in the field of study Subject group related to scientific research in the field of study		
Mode of study	full-time studies		Mode of delivery		at the university		
Year of study	2		Language of instruction		Polish		
Semester of study	4		ECTS credits		5.0		
Learning profile	academic		Assessment form		exam		
Conducting unit	Institute of Informatics -> Faculty of Mathematics, Physics and Informatics -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. Wiesław Pawłowski				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	0.0	30.0	0.0	0.0	60
	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	60		0.0		65.0	125
Subject objectives	The purpose of the course is to familiarize students with the most important aspects of database application development, including the use of the most popular models, i.e., relational and document-based.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[INFL3_U02] can precisely formulate questions to deepen one's understanding of a given topic or find missing elements of reasoning		can analyze a problem/task in terms of its database modeling		[SU2] presentation/project/paper/report [SU4] test/exam - oral or written		
	[INFL3_W06] has a structured knowledge of various models of database systems, with particular emphasis on the relational model		knows the most important advantages of the relational model and the document model and can use them in practice		[SW5] implementation of a problem task		
	[INFL3_U08] has the ability to select the type of database depending on the needs, create an adequate data model and use it to build database applications		is able to design and implement a database application selecting an appropriate data model		[SU2] presentation/project/paper/report [SU4] test/exam - oral or written		
Subject contents	- JavaScript and the Node.js environment - Principles of creating and using RESTful APIs - Using SQL servers from within Node.js tools and libraries - Using MongoDB from within Node.js tools and libraries - Design and implementation of the examination project						

Prerequisites and co-requisites	• acquaintance with the relational model and SQL language		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	programming colloquia	51.0%	10.0%
	examination project	51.0%	90.0%
Recommended reading	Basic literature	• E. Brown, Web Development with Node and Express, 2nd Edition, O'Reilly Media, 2019. • S. Brandshaw, E. Brazil, K. Chodorow, MongoDB: The Definitive Guilde, O'Reilly Media, 2020. • S. Springer, Node.js: The Comprehensive Guide, Rheinwerk Computing, 2022.	
	Supplementary literature	• F. Dogilo, REST API Development with Node.js, Apress, 2018. • D. Herron, Node.js Web Development, Fifth Edition, Apress, 2020. • A. Mend, Learning Node.js Development, Packt Publishing, 2018.	
	eResources addresses		
Example issues/ example questions/ tasks being completed			
Work placement	Not applicable		

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