

Subject card

Subject name and code	Database management systems, PG_00167658						
Field of study	Informatics						
Date of commencement of studies	October 2025		Academic year of realisation of subject		2027/2028		
Education level	Bachelor's studies		Subject group		Obligatory subject group in the field of study		
Mode of study	part-time studies		Mode of delivery		at the university		
Year of study	3		Language of instruction		Polish		
Semester of study	5		ECTS credits		8.0		
Learning profile	academic		Assessment form		exam		
Conducting unit							
Name and surname of lecturer (lecturers)	Subject supervisor		dr Andrzej Borzyszkowski				
	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		140.0	200
Subject objectives	The main objective of the course is to familiarize students with the principles of operation, administration and available software of selected database servers. For this purpose, very popular database servers will be used, namely Postgresql and Microsoft SQL Server. Mechanisms of these servers may be compared sometimes with those of other servers, e.g. Oracle.						
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		is able to precisely formulate questions to deepen his/her own understanding of a given topic or to find missing elements of a reasoning		[SU1] oral statement/conversation/discussion [SU8] observation of student's independent or team work		
	[INFL3_W06] has a structured knowledge of various models of database systems, with particular emphasis on the relational model		has structured, theoretically and practically based knowledge of architecture, configuration and administration of various database systems has knowledge of information management, knows relational database systems		[SW4] test/exam - oral or written [SW1] oral statement/conversation/discussion [SW2] presentation/project/paper/report		
	[INFL3_W10] knows the basic principles of occupational health and safety in the IT profession		knows the basic principles of health and safety for IT professionals		[SW1] oral statement/conversation/discussion		
	[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 configure, administer and optimize the selected database server		[SU2] presentation/project/paper/report [SU8] observation of student's independent or team work		

Subject contents	• database system architecturedatabase users • tasks of a database sever admin • configuration of a database server on the example of Postgresql, Microsoft SQL Server, Oracle - configuration at the time of installation and later, review of configuration files • database security issues • database systems schema • data definitions (attention paid to array type, table inheritance, complex types, system columns) • transactions and locks (transaction characteristics, ANSI/ISO isolation levels, explicit and implicit locks) • Write-Ahead Log in Postgresql and its equivalents in other database systems • functions and triggers, psql • accessing a database from a programming environment (example) • backups, database replication, database optimization • elements of an R language in data processing		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	test	51.0%	25.0%
	exam	51.0%	50.0%
	solve tasks/problems	51.0%	25.0%
Recommended reading	Basic literature	1. Molina, Ullman, Widom : Systemy baz danych Pełny wykład, WNT 2006 2. Lis: Ćwiczenia z Postgresql 8.3, Helion 2008 3. Internetowe fora of Postgresql, MS SQL Server, Oracle, R users 4. Documentation of Postgresql, Microsoft SQL Server, Oracle	
	Supplementary literature	none	
	eResources addresses		
Example issues/ example questions/ tasks being completed			
Work placement	Not applicable		

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