

GDAŃSK UNIVERSITY

Subject card

Subject name and code	Databases Basics, PG_00047534								
Field of study	Electronics and Telecommunications								
Date of commencement of studies	October 2021		Academic year of realisation of subject		2021/2022				
Education level	first-cycle studies		Subject group			Obligatory subject group in the field of study			
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			2.0			
Learning profile	general academic profile		Assessment form			assessment			
Conducting unit	Department of Biomedical Engineering -> Faculty of Electronics, Telecommunications and Informatics								
Name and surname	Subject supervisor		dr inż. Adam Bujnowski						
of lecturer (lecturers)	Teachers		dr inż. Magdalena Mazur-Milecka						
			mgr inż. Natalia Kowalczyk						
			dr inż. Tomasz Koceiko						
			dr Inz. Adam Bujnowski						
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Projec	t	Seminar	SUM	
	Number of study hours	15.0	0.0	15.0	0.0		0.0	30	
	E-learning hours included: 0.0								
	Adresy na platformie eNauczanie:								
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	30		2.0		18.0		50	
Subject objectives	Basic terms: database, data model, database management system. Fundamental data models - flat file, hierarchical, networking and relational data models. Designing of the relational databases. Management of the databases using SQL. Relational algebra. Functions, triggers in the modern DBMS. Transactions. Connection to the database from procedural languages.								

Learning outcomes	Course outcome	Subject outcome	Method of verification				
	[K6_U04] can apply knowledge of programming methods and techniques as well as select and apply appropriate programming methods and tools in computer software development or programming devices or controllers using microprocessors or programmable elements or systems specific to the field of study	Student knows and identified data models Stundent knows how to design realtional database	[SU1] Assessment of task fulfilment				
	[K6_W04] Knows and understands, to an advanced extent, the principles, methods and techniques of programming and the principles of computer software development or programming devices or controllers using microprocessors or programmable elements or systems specific to the field of study, and organisation of systems using computers or such devices	Student knows basics of the SQL language Studena applies SQL statements within languages like C/C++ and PHP	[SW3] Assessment of knowledge contained in written work and projects				
	[K6_W01] Knows and understands, to an advanced extent, mathematics necessary to formulate and solve simple issues related to the field of study	Studeny knows basics of mathematical set theory Student applies basic operations on sets	[SW1] Assessment of factual knowledge [SW3] Assessment of knowledge contained in written work and projects				
Subject contents	Principal terms - data, information, knowledge, database, DBMS, data model. Lauered model of database system, Datamodel vs data structure, Flat databases, Relatron between entites, hierarchical model, network data model, XML as a hierarchical database, Relational data model - structure of the data, Data integrity in relational databases, Graphical notations of the RDB structure, Normalisation, Designing of the relational databases, SQL - genesis, usage of the SQL, classification. Data definition language, Data types in SQL, Data manipulation language, tuple selection statements, SELECT - data retrieval, SQL - privileges, user and database management, Aggregate functions, User defined functions, triggers, transactions, additional SQL forms - comments, Backup copies of the data, Data access methods - using procedural languages.						
Prerequisites and co-requisites	Basic skills in computing. Programming in C/C++						
Assessment methods	Subject passing criteria	Passing threshold	Percentage of the final grade				
	final writting	50.0%	40.0%				
	laboratory achievements	50.0%	60.0%				
Recommended reading	Basic literature	Davies, Database systems Matthews Stones, Databases and PostgreSQL Rumiński, Bujnowski,					
	Supplementary literature	Sharon Allen , Projektowanie baz da www.postgresql.org	anych, Helion				
	eResources addresses						
Example issues/ example questions/ tasks being completed	Design the dayabase structure of (shop / libraty etc) Using the SQL language implement database, manage data and analuse data with result presentation Using PHP and www technology create the interface to the database						
Work placement	Not applicable						