GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Transfer, collection and data security, PG_00044137
Field of study	Mathematics

Date of commencement of studies	October 2023	**Academic year of realisation of subject**	2023/2024
Education level	second-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	1	**Language of instruction**	Polish
Semester of study	2	**ECTS credits**	4.0
Learning profile	general academic profile	**Assessment form**	assessment

Conducting unit	Institute of Applied Mathematics -> Faculty of Applied Physics and Mathematics

Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Magdalena Chmara
	Teachers	dr hab. Paweł Pilarczyk
		dr inż. Magdalena Chmara

Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	0.0	15.0	15.0	0.0	60
	E-learning hours included: 30.0						

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	5.0	35.0	100

Subject objectives	The purpose of the course is to familiarize you with the formats and tools for secure data storage, analysis and transmission

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[K7_K01] Knows the limitations of one's own knowledge and understands the need for further education, can independently search for information in literature, also in foreign languages.	- The student uses technical documentation technical. - The student uses resources Internet resources in English.	[SK5] Assessment of ability to solve problems that arise in practice
	[K7_U11] Can construct mathematical models used in specific advanced applications of mathematics, can use stochastic processes as a tool for modeling phenomena and analyzing their evolution.	- The student is able to choose the method of data collection. - The student is able to design database structure. - The student is able to collect data. - The student is able to analyze collected data.	[SU2] Assessment of ability to analyse information [SU4] Assessment of ability to use methods and tools
	[K7_W11] Knows the mathematical foundations of information theory, the theory of algorithms and cryptography and their practical applications, i.a. in programming and computer science.	- student knows the basics of cryptography theory - The student is able to take care of security of the collected data. - The student is able to securely transfer collected data.	[SW1] Assessment of factual knowledge

Subject contents	- overview of different types of databases
	  - creation of database applications
	  - data transmission on the internet
	  - OSI model
	  - Security of databases
	  - RODO
	  - elements of cryptography
	  - threats to data		

Prerequisites and co-requisites	databases and programming		

Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Lecture	60.0%	33.0%
	Laboratory	60.0%	33.0%
	Project	60.0%	34.0%

Recommended reading	Basic literature	Deshpande, Prachi S., et al. *Security and Data Storage Aspect in Cloud Computing by Prachi S. Deshpande, Subhash C. Sharma, Sateesh K. Peddoju.* Springer Singapore, 2019. Shannon Bradshaw Eoin Brazil, Chodorow, Kristina. *MongoDB: Powerful and Scalable Data Storage* OReilly, 2019.
	Supplementary literature	Hu, Fei. *Big Data: Storage, Sharing, and Security / Edited by Fei Hu.* CRC Press, 2016.
	eResources addresses	Uzupełniające Adresy na platformie eNauczanie: Przesyłanie, gromadzenie i bezpieczeństwo danych 2024 - Moodle ID: 31165 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=31165

Example issues/ example questions/ tasks being completed	How to keep your data safe on the Internet? The differences between the HTTP and HTTPS protocols. Differences between relational and graph databases.
Work placement	Not applicable

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