Subject card

Subject name and code	Network Management and Security, PG_00047746
Field of study	Informatics

Date of commencement of studies	October 2025	Academic year of realisation of subject	2026/2027
Education level	second-cycle studies	Subject group	Optional subject group Subject group related to scientific research in the field of study
Mode of study	Part-time studies	Mode of delivery	at the university
Year of study	2	Language of instruction	Polish
Semester of study	3	ECTS credits	4.0
Learning profile	general academic profile	Assessment form	exam

Conducting unit	Department of Computer Communications -> Faculty of Electronics Telecommunications and Informatics -> Wydziały Politechniki Gdańskiej

Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. inż. Jacek Rak
	Teachers	dr hab. inż. Jacek Rak

Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	12.0	0.0	0.0	15.0	0.0	27
	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	27	10.0	63.0	100

Subject objectives	Knowledge of security threats of networks connected to the Internet, methods of security violation, methods protecting against security attacks, understanding of the role of security policy and methods of security management of information systems.

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[K7_U08] while identifying and formulating engineering tasks specifications and solving these tasks, can: - apply analytical, simulation and experimental methods, - notice their systemic and non-technical aspects, - make a preliminary economic assessment of suggested solutions and engineering work	Student is able to propose security measure taking under consideration threats of network and systems environment.	[SU5] Assessment of ability to present the results of task
	[K7_U09] can carry out a critical analysis of the functioning of existing technical solutions and assess these solutions, as well as apply experience related to the maintenance of advanced technical systems, devices and facilities typical for the field of studies, gained in the professional engineering environment	Student is able to propose security measure taking under consideration specifics of network and systems environment.	[SU1] Assessment of task fulfilment
	[K7_W08] knows and understands, to an increased extent, the fundamental dilemmas of modern civilisation, the main development trends of scientific disciplines relevant to the field of education	Student knows security measures suitable for IT systems, selected cryptographic algorithms, systems security standards and Public Key Infrastructure.	[SW3] Assessment of knowledge contained in written work and projects

Subject contents	Security threats of networked systems. Classes of security risks of networked systems. Attack categories. Attack techniques. Firewall classes. Firewall configurations. Access control systems. Intrusion. detection systems. Virtual private networks (VPN) - classification. VPN L2 protocols. VPN L3-5 protocols. Security policy. Security maintenance. Security level evaluation. Audit.

Prerequisites and co-requisites	No requirements		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Project	50.0%	50.0%
	Written exam	50.0%	50.0%
Recommended reading	Basic literature	J. Stokłosa, T. Bilski, T. Pankowski: "Bezpieczenstwo danych w systemach informatycznych", PWN, Warszawa Poznań, 2001 A. Białas: "Bezpieczeństwo informacji i usług w nowoczesnej instytucji i firmie", WNT, Warszawa 2007 K. Liderman: "Podręcznik administratora bezpieczeństwa teleinformatycznego", Mikom, Warszawa 2003 K. Liderman: "Analiza ryzyka i ochrona informacji w systemach komputerowych", PWN, Warszawa 2008	
	Supplementary literature	No requirements	
	eResources addresses		
Example issues/ example questions/ tasks being completed			
Work placement	Not applicable		

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