



Subject card

Subject name and code	Network Management and Security, PG_00047746						
Field of study	Informatics						
Date of commencement of studies	October 2022		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	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						
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_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
	[K7_W09] Knows and understands, to an increased extent, the economic, legal and other conditions of various types of activities related to the given qualification, including the principles of protection of industrial property and copyright.	Student understands the importance of security policy as an important security factor of the whole system.	[SW3] Assessment of knowledge contained in written work and projects
	[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_U08] while identifying and formulating engineering tasks specifications and solving these tasks, can:n- apply analytical, simulation and experimental methods,n- notice their systemic and non-technical aspects,n- make a preliminary economic assessment of suggested solutions and engineering workn	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
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
	Written exam	50.0%	50.0%
	Project	50.0%	50.0%
Recommended reading	Basic literature	J. Stokłosa, T. Biłski, T. Pankowski: "Bezpieczeństwo 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	Adresy na platformie eNauczanie:	
	Example issues/ example questions/ tasks being completed		
Work placement	Not applicable		