GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Network Security Management, PG_00053895		
Field of study	Informatics		
Date of commencement of studies	October 2026	Academic year of realisation of subject	2028/2029
Education level	first-cycle studies	Subject group	Obligatory subject group in the field of study Subject group related to scientific research in the field of study
Mode of study	Full-time studies	Mode of delivery	at the university
Year of study	3	Language of instruction	Polish
Semester of study	6	ECTS credits	3.0
Learning profile	general academic profile	Assessment form	exam
Conducting unit	Department of Computer Communications -> Faculty of Electronics Telecommunications and Informatics -> Faculties of Gdańsk University of Technology		
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Krzysztof Gierłowski	
	Teachers	dr inż. Krzysztof Gierłowski	

Lesson types

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	15.0	0.0	30.0	0.0	0.0	45

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	45	1.0	29.0	75

Subject objectives

The aim of the course is to acquiant students in theory and practice with:

- basic security mechanisms of IT systems,
- security solutions which can be applied to mitigate threats,

and to form the attitude to look at security as a continuous process (security management).

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K6_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 technical systems, devices and facilities typical for the field of studies, gained in the professional engineering environment	Student is capable of configuring known security measures applicable to computer networks.	[SU1] Assessment of task fulfilment
[K6_U07] can apply methods of process and function support, specific to the field of study	Student knows current IT systems security solutions, is capable of choosing them according to identified threats.	[SU2] Assessment of ability to analyse information
[K6_W44] knows and understands, to an advanced extent, architecture, design principles and methods of hardware and software support for local and distributed information systems, including computing systems, databases, computer networks and information applications, as well as the principles of human-computer interaction, the operation and evaluation criteria of data processing, storage and transfer methods, including computational algorithms, artificial intelligence and data mining as well as standards and methods of IT systems administration, monitoring of processes and robustness to undesirable phenomena and activities	Student knows current IT systems security solutions, complete with their characteristics, requirements for their deployment and offered functionality.	[SW1] Assessment of factual knowledge

Subject contents

Course content – lecture
Basic security mechanisms and security requirements for IP networks. Filtration and separation of IP traffic (VLAN, tunneling, firewall). Digital certificates and PKI. Cryptographic protection of network traffic (TLS). Network monitoring. Access control solutions (RADIUS). Network remote access (VPN). Use of hardware cryptographic devices and biometry. Role of network security policy. Security maintenance. Security management of information systems.

Prerequisites and co-requisites

Basic familiarity with computer networks and IP networks in particular.

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
exam	50.0%	50.0%
lab	50.0%	50.0%

Recommended reading

Basic literature	Białas A.: Bezpieczeństwo informacji i usług w nowoczesnej instytucji i firmie, WNT, Warszawa 2007 r. Liderman K. : Podręcznik administratora bezpieczeństwa sieciowego, Mikom, Warszawa 2003 r. Liderman K. : Analiza ryzyka i ochrona informacji w systemach komputerowych, PWN, Warszawa 2008 r. Stokłosa J., Bilski T., Pankowski T.: Bezpieczeństwo danych w systemach informatycznych, PWN, Warszawa 2001 r.
Supplementary literature	Denning E.: Wojna informatyczna i bezpieczeństwo informacji, WNT, Warszawa 2002 r. Benjamin H. : Cisco CCIE Security, Mikom, Warszawa 2004 r.
eResources addresses	

Example issues/ example questions/ tasks being completed

Practical activites within the subject	Not applicable

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