GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Networks Management, PG_00047957
Field of study	Informatics

Date of commencement of studies	October 2020	Academic year of realisation of subject	2023/2024
Education level	first-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	at the university
Year of study	4	Language of instruction	Polish
Semester of study	7	ECTS credits	2.0
Learning profile	general academic profile	Assessment form	assessment

Conducting unit	Department of Computer Communications -> Faculty of Electronics, Telecommunications and Informatics

Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Krzysztof Gierłowski
	Teachers	dr inż. Krzysztof Gierłowski dr inż. Michał Hoeft

Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	0.0	15.0	0.0	30
	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	30	2.0	18.0	50

Subject objectives	The purpose of the course is to introduce theoretical and practical secure mechanisms for computer network management.

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[K6_U42] can apply tools and methods of designing, optimization, monitoring, management, increasing reliability and protection from safety hazards in local and distributed information systems and applications	Student is able to provide various remote access means to network resources and secure inter-network integration proposal.	[SU5] Assessment of ability to present the results of task
	[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 providing basic vital network services.	[SU1] Assessment of task fulfilment
	[K6_W03] Knows and understands, to an advanced extent, the construction and operating principles of components and systems related to the field of study, including theories, methods and complex relationships between them and selected specific issues - appropriate for the curriculum	Student knows and applies complex security solutions: SIEM, traffic capture and analysis, SSL inspection and application firewalls.	[SW1] Assessment of factual knowledge
	[K6_W43] Knows and understands, to an advanced extent, standards and methods of IT systems administration, monitoring of processes occurring in them and immunising them to undesirable phenomena and activities	Student knows different network management solutions and is capable of choosing them according to network environment properties.	[SW1] Assessment of factual knowledge

Subject contents	1. Network management requirements. 2. Network management fundamentals. Control and monitoring. 3. Management functional areas (FCAPS). 4. Object-oriented management information model. 5. ASN.1 and BER standards. 6. GDMO Model of management object definition, 7. Structure of management information. 8. Management information base: MIB I and MIB II. 9. Remote network monitoring. 10. Data capture. Alarms and filters. 11. RMON I and RMON II protocols. 12. Network management based on SNMPv1 protocol, 13. SNMPv2 protocol, 14. Remarks on SNMPv3. 15. Systems supporting network management.

Prerequisites and co-requisites	Students should know the basics of IT systems security.

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	W. Stallings: "Protokoły SNMP i RMON", Helion, Gliwice 2003
	Supplementary literature	No requirements
	eResources addresses	Adresy na platformie eNauczanie: Zarządzanie sieciami (2023Z) - Moodle ID: 34785 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=34785

Example issues/ example questions/ tasks being completed	
Work placement	Not applicable