GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Computer Networks Administration, PG_00047956		
Field of study	Informatics		
Date of commencement of studies	October 2022	Academic year of realisation of subject	2025/2026
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	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 inż. Wojciech Gumiński	
	Teachers	dr inż. Wojciech Gumiński dr inż. Krzysztof Gierłowski	

Lesson types and methods of instruction	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	4.0	51.0	100

Subject objectives	The main objective of the course is to provide students with knowledge about the principles of administration of computer networks and to gain by them practical skills in the field of network monitoring and implementation of solutions which increase network reliability and network security.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K6_U03] can design, according to required specifications, and make a simple device, facility, system or carry out a process, specific to the field of study, using suitable methods, techniques, tools and materials, following engineering standards and norms, applying technologies specific to the field of study and experience gained in the professional engineering environment	Student makes plan of names and addresses of the devices.	[SU2] Assessment of ability to analyse information [SU1] Assessment of task fulfilment
[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 manages permissions. Student uses tools to monitor the network. Students choose the method of network inventory.	[SW1] Assessment of factual knowledge
[K6_W42] 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 cooperation with computers and computer-aided teamwork	Student identifies the tasks of administrator. Student compares the methods of archiving data in the network. Student makes plan of names and addresses of the devices.	[SW1] Assessment of factual knowledge
[K6_U04] can apply knowledge of programming methods and techniques as well as select and apply appropriate programming methods and tools in computer software development or programming devices or controllers using microprocessors or programmable elements or systems specific to the field of study	Student manages permissions. Student uses tools to monitor the network.	[SU4] Assessment of ability to use methods and tools [SU3] Assessment of ability to use knowledge gained from the subject [SU1] Assessment of task fulfilment

Subject contents

1. Network administrator tasks 2. Cooperation with systems administrator 3. Analysis and realization of network goals 4. Network addresses and names politics 5. Routes and network protocols selection 6. Network flow monitoring and shaping 7. Network flow counting and optimization 8. Network services administration (DHCP, DNS, WINS) 9. WAN access management (NAT, PAT, Proxy) 10. Network serwers administration (WWW, FTP, e-mail) 11. Network resource sharing 12. Domain administration 13. User and hardware authentication. Network privileges. 14. Remote access 15. Network security. Intruder indentyfication. 16. Network failures diagnosis and fixing 17. Network evolution, network documentation and hardware selection

Prerequisites and co-requisites

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
Written examination	50.0%	40.0%
Practical exercise	50.0%	60.0%

Recommended reading

Basic literature	M. Sportack, T. Northrup; Networking Essentials Unleashed; Sams Publishing 2006 J. Scott Haugdahl; Network Analysis and Troubleshooting; Addison-Wesley Professional 1999
Supplementary literature	No requirements
eResources addresses	Adresy na platformie eNauczanie:

Example issues/ example questions/ tasks being completed

Work placement

Not applicable