GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Computer networks - lectures, PG_00045321		
Field of study	Data Engineering		
Date of commencement of studies	October 2024	Academic year of realisation of subject	2026/2027
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	3	Language of instruction	English
Semester of study	5	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. Artur Tomaszewski	
	Teachers	dr hab. inż. Artur Tomaszewski	

Lesson types and methods of instruction

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	30.0	0.0	0.0	0.0	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	10.0	60.0	100

Subject objectives

The student becomes familiar with the network layered logical architectures, classifies the basic problems of network communication and identifies and analyzes selected protocols and mechanisms of LAN and WAN (IP) networks

Learning outcomes

Course outcome	Subject outcome	Method of verification

Subject contents

1. Classification and general characteristics of computer networks 2. Layered network architectures - ISO-OSI, TCP / IP 3. LAN networks - general characteristics - classification of access methods 4. Wired solutions of the contention type: Ethernet networks - MAC layer functions and principles of access to the medium - IEEE 802.3 standard 5. Wireless LANs - general characteristics, IEEE 802.11 standard - operating modes and access methods 6. New Ethernet technologies 7. LAN connection methods, VLANs 8. Internetworking 9. Wide area computer networks - WAN networks 10. TCP / IP architecture - IP protocols and UDP / TCP transport protocols 11. IP protocols, addressing, 12. Routing methods in WAN networks 13. Flow control between end systems in IP networks. 14. Congestion control methods in IP networks. 15. Network security 16. Selected network services and applications.

Prerequisites and co-requisites

There are no entry requirements

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
written exam	50.0%	100.0%

Recommended reading

Basic literature	Tannenbaum A.: Computer Networks. Prentice Hall Stallings W.: High Speed Networks and Internets. Prentice Hall

	Supplementary literature	Nowicki K., Woźniak J. : Przewodowe i bezprzewodowe sieci LAN. Oficyna Wyd. PW. Nowicki K, Światowiak J.: Protokoły IPv6 Woźniak J., Nowicki K.: Sieci LAN, MAN, WAN - protokoły komunikacyjne. Wyd. Postępu Telekomunikacji Nowicki K.: Materiały z wykładu Sieci Ethernet; Krawczyk H,. Kaczmarek S. Nowicki K.: Aplikacje i usługi a technologie sieciowe. PWN 2018
	eResources addresses	Adresy na platformie eNauczanie:
Example issues/ example questions/ tasks being completed	Description of network architectures and basic standards. Comparison of standard wired and wireless LAN networks. Comparison of network connection methods and devices. Description of addressing methods in LAN and WAN networks. Description of selected routing protocols and basic communication protocols in IP networks. Description of selected network applications.	
Work placement	Not applicable	

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