



Subject card

Subject name and code	Basic Computer Networks, PG_00047609						
Field of study	Automatic Control, Cybernetics and Robotics						
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			Polish		
Semester of study	5	ECTS credits			1.0		
Learning profile	general academic profile	Assessment form			assessment		
Conducting unit	Faculty of Electronics, Telecommunications and Informatics						
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Krzysztof Nowicki					
	Teachers	dr inż. Krzysztof Nowicki					
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	0.0	0.0	0.0	15
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	15		1.0		9.0	25
Subject objectives	Student becomes familiar with logical layered architectures, classifies basic networking problems and identifies and analyzes selected protocols and mechanisms implemented in standard LAN and WAN solutions.						
Learning outcomes	Course outcome	Subject outcome			Method of verification		
	[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	The student has knowledge about basic architectures, protocols and network devices. The student has knowledge of wired and wireless networks described by the standards of the IEEE 802 series. The student has knowledge about the basic protocols of IP networks.			[SW1] Assessment of factual knowledge		
	[K6_W06] Knows and understands the basic processes occurring in the life cycle of devices, facilities and systems specific to a given field of study.	Student is able to analyze the work of selected devices and protocols used in LAN and IP networks. The student is able to assess the changes and trends observed in the analyzed network technologies.			[SW1] Assessment of factual knowledge		
	[K6_W07] Knows and understands, to an advanced extent, the general principles of setting up and development of business entities, forms of individual entrepreneurship and running ventures in the field specific to the field of study	The student is able to assess the current state and trends observed in standardization and implementation works, as well as assess processes taking place on the ICT technology market.			[SW1] Assessment of factual knowledge		

Subject contents	<p>General characteristics and goals of computer networks, applications, classifications of computer networks 0.5h Logical architectures of the ISO / OSI and TCP / IP 1h Selected technologies for wired and wireless LAN and MAN general characteristics 1h Standard Series Ethernet 802.3 1h Evolution of Ethernet-Fast Ethernet and 1/10 Gigabit Ethernet 1h 40/100 Gigabit Ethernet 0.5h Wireless WLANs - basic characteristics 1h The IEEE 802.11 (a, b, g, n) 1h Ethernet, WiFi and IP in automatic control 1h LAN connection method characteristics 1h LAN connection devices 1h IP network organization 0,5h IPv4 protocols 1h Problems of migration of operating systems, applications and services to IPv6 1h Routing protocols 1h</p> <p>Transport layer protocols - TCP and UDP Computer network security 1h</p>											
Prerequisites and co-requisites												
Assessment methods and criteria	<table border="1"> <thead> <tr> <th data-bbox="453 687 794 714">Subject passing criteria</th> <th data-bbox="799 687 1141 714">Passing threshold</th> <th data-bbox="1145 687 1482 714">Percentage of the final grade</th> </tr> </thead> <tbody> <tr> <td data-bbox="453 721 794 748">written examination</td> <td data-bbox="799 721 1141 748">50.0%</td> <td data-bbox="1145 721 1482 748">100.0%</td> </tr> </tbody> </table>			Subject passing criteria	Passing threshold	Percentage of the final grade	written examination	50.0%	100.0%			
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Example issues/ example questions/ tasks being completed	<p>Description of logical network architectures and basic standards.</p> <p>Comparison of selected standard wired and wireless LAN networks.</p> <p>Comparison of methods and devices for connecting networks.</p> <p>Description of addressing methods in LAN and WAN networks.</p> <p>Description and comparison of selected routing protocols and basic communication protocols in IP networks.</p> <p>Description of selected network applications.</p>											
Work placement	Not applicable											