

Subject card

Subject name and code	Computer networks, PG_00143532						
Field of study	Informatics						
Date of commencement of studies	October 2025		Academic year of realisation of subject			2027/2028	
Education level	Bachelor's 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	5		ECTS credits			4.0	
Learning profile	academic		Assessment form				
Conducting unit							
Name and surname of lecturer (lecturers)	Subject supervisor		dr Adam Kostulak				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	0.0	30.0	0.0	0.0	60
	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	60		0.0		40.0	100
Subject objectives	Presentation of the principles of computer networks, the devices and communication protocols used in them communication devices and protocols and the services they offer. Preparing students to create topologies, configuration and diagnostics of networks built with the use of Cisco routers and switches preparation for the Cisco Certified Network Associate (CCNA) certification in the scope of semester I Routing & Switching along with obtaining a course completion certificate.						
Learning outcomes	Course outcome		Subject outcome			Method of verification	
	[INFL3_U02] can precisely formulate questions to deepen one's understanding of a given topic or find missing elements of reasoning		Effectively uses contact with the trainer in the design of network infrastructures			[SU4] test/exam - oral or written	
	[INFL3_U07] uses advanced functionalities of operating systems, especially related to network aspects		Has knowledge of operating systems operating systems, network technologies network technologies, including basic communication protocols			[SU4] test/exam - oral or written	
	[INFL3_W10] knows the basic principles of occupational health and safety in the IT profession		Safely uses network equipment for experiments and projects			[SW4] test/exam - oral or written	
	[INFL3_W08] has knowledge of network technologies, including basic communication protocols, security and construction of network applications		Lists and defines the protocols used in LANs Characterises routing protocols RIP, OSPF, EIGRP			[SW4] test/exam - oral or written	

Subject contents	Introduction to TCP/IP networks Network protocols and communication Network devices - hubs, bridges, switches, routers Access to the network - MAC addresses, ARP protocol, STPs Ethernet technology, types of cabling MAC addressing, ARP protocol, STP Ethernet technology, types of cabling Network layer - static routing, dynamic routing - RIP, OSPF, EIGRP VLAN technology Transport layer - TCP and UDP protocols IP addressing ver. 4 and 6 Subdivision of IP networks into subnetworks Application layer, servers WWW, DNS, MAIL, DHCP, NAT Network security, ACL Scaling and aggregation Network management - SNMP protocol, MIB		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	final exam	51.0%	50.0%
	test 1	51.0%	25.0%
	test 2	51.0%	25.0%
Recommended reading	Basic literature	CCNA I semester Routing & Switching	
	Supplementary literature	Cisco Networking Academy, Routing and Switching Essentials Companion Guide, Cisco Press, Indianapolis 2022	
	eResources addresses		
Example issues/ example questions/ tasks being completed	Design the network infrastructure (layers 1-3) of a given facility		
Work placement	Not applicable		

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