

Subject card

Subject name and code	Computer Network Administration, PG_00178063						
Field of study	Informatics and Econometrics						
Date of commencement of studies	October 2025		Academic year of realisation of subject		2026/2027		
Education level	Bachelor's studies		Subject group		Obligatory subject group in the field of study 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	2		Language of instruction		Polish		
Semester of study	4		ECTS credits		7.0		
Learning profile	academic		Assessment form		exam		
Conducting unit	Department of Business Informatics -> Faculty of Management -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. Bartosz Marcinkowski, prof. UG				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	60.0	0.0	0.0	75
	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	75		4.0		96.0	175
Subject objectives	• preparing students to build topologies as well as configure and diagnose networks based on Cisco routers and switches • developing skills of selecting routing strategies, solving intermediate-level routing configuration problems, managing switches at the VLAN level, and implementing DHCP, ACL, and NAT/PAT services • making students ready for the Cisco Certified Network Associate certification						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[liEL3_U02] Students can select or construct econometrics, informatics or statistics tools and apply them to describe and solve economic and social problems.	(1) is able to perform basic configuration of switches and routers; (2) is able to propose an optimal routing method and configure the associated routing protocols; (3) is able to implement network security elements regarding password policies, logical network separation, port security, and Access Control Lists (ACLs); (4) is able to extend end-device addressing mechanics by implementing DHCP and NAT/PAT services.	[SU5] implementation of a problem task
	[liEL3_W08] The student has advanced knowledge and understanding of the possibilities and dilemmas of using informatics and statistics tools and their importance in the context of changing needs.	(1) knows and understands the specifics and role of individual network devices and transmission media in network architecture; (2) knows and understands network addressing schemes and the criteria for their selection; (3) knows and understands the operational principles of selected network protocols/services and the datagrams they utilize; (4) knows and understands how network security components function.	[SW4] test/exam - oral or written
	[liEL3_U12] The student can design and implement IT systems to enhance business operations and effectively utilize modern ICT technologies for management and business communication.	(1) is able to creatively adapt network infrastructure to the needs of a business organization; (2) is able to construct physical connections between network and end devices; (3) is able to evaluate network performance and plan its development.	[SU5] implementation of a problem task
Subject contents	A. Topics of the lecture: • Basic networking concepts • Layered network models • MAC, IPv4 and IPv6 addressing • Networking media • Networking devices • Static and dynamic routing, redistribution of routing entries • Specialised network technologies and protocols across switches and routers • Network monitoring B. Lab topics: • Basic commands on hosts • Handling network addresses • Physical cabling, patch panels • Introduction to IOS • Building networking topologies • Password policy • Static routing • Introduction to routing protocols • DHCP service • Port security • VLANs • Advanced routing protocols - EIGRP, OSPF • Configuring NAT/PAT service on networking devices • Access Control Lists • ROM-monitor mode		
Prerequisites and co-requisites	Bit-based operations, software classes, command line operation, general features of operating systems and input/output processes		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	practical assessment	51.0%	50.0%
	written exam	51.0%	30.0%
	certification assessment - incremental grading	51.0%	20.0%

Recommended reading	Basic literature	• Cisco Networking Academy (2025); CCNA: Introduction to Networks • Cisco Networking Academy (2025); CCNA: Switching, Routing, and Wireless Essentials • Cisco Networking Academy (2025); CCNA: Enterprise Networking, Security, and Automation
	Supplementary literature	• Empson S. (2019); CCNA 200-301 Portable Command Guide. Fifth Edition; Cisco Press
	eResources addresses	
Example issues/ example questions/ tasks being completed		
Work placement	Not applicable	

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