University of Gdańsk

Subject card

Subject name and code	Computer networks, PG_00143532		
Field of study	Informatics		
Date of commencement of studies	October 2024	Academic year of realisation of subject	2026/2027
Education level	Bachelor's studies	Subject group	Obligatory subject group 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 polish
Semester of study	5	ECTS credits	4.0
Learning profile	academic	Assessment form	exam
Conducting unit			
Name and surname of lecturer (lecturers)	Subject supervisor	dr Adam Kostulak	
	Teachers	dr Mikołaj Czechlewski dr Adam Kostulak	

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	[SU1] oral statement/conversation/ discussion
[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
[INFL3_W10] knows the basic principles of occupational health and safety in the IT profession	Safely uses network equipment for experiments and projects	[SW1] oral statement/ conversation/discussion
[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	[SU2] presentation/project/paper/ report

<table>
<tr><td>Subject contents</td><td>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</td></tr>
<tr><td>Prerequisites and co-requisites</td><td></td></tr>
<tr><td>Assessment methods and criteria</td><td>
<table>
<tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr>
<tr><td>final exam</td><td>50.0%</td><td>50.0%</td></tr>
<tr><td>test 2</td><td>50.0%</td><td>25.0%</td></tr>
<tr><td>test 1</td><td>50.0%</td><td>25.0%</td></tr>
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<tr><td>Recommended reading</td><td>
<table>
<tr><td>Basic literature</td><td>CCNA I semester Routing & Switching</td></tr>
<tr><td>Supplementary literature</td><td>Cisco Networking Academy, Routing and Switching Essentials Companion Guide, Cisco Press, Indianapolis 2022</td></tr>
<tr><td>eResources addresses</td><td>Basic
http://netacad.com - CCNA
Supplementary
http://netacad.com - CCNA</td></tr>
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<tr><td>Example issues/ example questions/ tasks being completed</td><td>Design the network infrastructure (layers 1-3) of a given facility</td></tr>
<tr><td>Work placement</td><td>Not applicable</td></tr>
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