



Subject card

Subject name and code	NGN Systems and Architectures, PG_00048133						
Field of study	Electronics and Telecommunications						
Date of commencement of studies	October 2022	Academic year of realisation of subject			2024/2025		
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	6	ECTS credits			2.0		
Learning profile	general academic profile	Assessment form			assessment		
Conducting unit	Department of Teleinformation Networks -> Faculty of Electronics, Telecommunications and Informatics						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. inż. Sylwester Kaczmarek				
	Teachers		dr hab. inż. Sylwester Kaczmarek				
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	0.0	15.0	15.0	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		2.0		18.0	50
Subject objectives	Getting skills of the new generation networks testing and designing chosen problems concerning these networks but in that taking the quality of classes services into consideration.						
Learning outcomes	Course outcome	Subject outcome			Method of verification		
	[K6_U31] can identify telecommunications network architectures, differentiates their areas and functional elements, evaluates the quality of service delivery, calculates parameters of functional elements	Student is designing of practical quantitative and assessments of systems architectures. Student configures functional elements of practically used architectures. Student write and start up scripts for the realization of the functionality about determined qualitative and quantitative requirements.			[SU1] Assessment of task fulfilment		
	[K6_W35] Knows the concepts of the technique of signal transmission, operation of telecommunications networks and multimedia services and the rules for providing them	Student is designing of practical quantitative and assessments of systems architectures. Student configures functional elements of practically used architectures. Student write and start up scripts for the realization of the functionality about determined qualitative and quantitative requirements.			[SW1] Assessment of factual knowledge		
Subject contents	<p>LAB: ATM technology as the transport for IP. ATM network configuring for the IP over ATM realization. Tools for observation and measurements in the IP network. Tools for the generation of the packet traffic. Configuring H.323 and SIP software terminals. Gatekeeper configuring. Configuring of the Proxy Server. Checking the quality of service of the speech in the IP domain. Configuring of the edge node (router) in the DiffServ domain. Configuring of the core node (router) in the DiffServ domain. Checking the quality of service of the speech in the DiffServ IP QoS domain. The MPLS domain installation and testing.</p> <p>PROJECT: Designing IP over the ATM platform. Measurements and analysis of the traffic and the quality of service in the IP QoS network. Realization of mechanisms of DiffServ architecture. Designing HTB for DiffServ nodes. Designing service systems for DiffServ nodes. Scripts writing for the edge node (router) of the domain. Scripts writing for the core node (router) of the domain. Designing the domain for the VoIP service. Designing the MPLS domain.</p>						

Prerequisites and co-requisites	No requirements		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Practical exercise	50.0%	50.0%
	Project	50.0%	50.0%
Recommended reading	Basic literature	Material prepared by the lecturer in the form of xeroxcopy. Manual in the form of xeroxcopy.	
	Supplementary literature	No requirements.	
	eResources addresses		
Example issues/ example questions/ tasks being completed			
Work placement	Not applicable		