GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	QoS Packet Networks Design, PG_00048358					
Field of study	Electronics and Telecommunications					
Date of commencement of studies	February 2024		Academic year of realisation of subject		2024/2025	
Education level	second-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	1		Language of instruction		Polish	
Semester of study	2		ECTS credits		1.0	
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	0.0	15.0	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	2.0	8.0	25

Subject objectives	Transfer of knowledge necessary to design packet networks with traffic quality classes taking into account optical transport technologies.

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[K7_U09] can carry out a critical analysis of the functioning of existing technical solutions and assess these solutions, as well as apply experience related to the maintenance of advanced technical systems, devices and facilities typical for the field of studies, gained in the professional engineering environment	The student is designing resources quantitatively on the level of the network and the node including applied technologies on different plains. The design is taking into account the existing of classes of the quality of services and the cooperation of techniques with the switching of packages and channels.	[SU1] Assessment of task fulfilment
	[K7_U03] can design, according to required specifications, and make a complex device, facility, system or carry out a process, specific to the field of study, using suitable methods, techniques, tools and materials, following engineering standards and norms, applying technologies specific to the field of study and experience gained in the professional engineering environment	The student is realizing the team project out for three plains of the technology starting from the package IP network and having finished on the DWDM technology.	[SU1] Assessment of task fulfilment

Subject contents	Discussion of the principles of project implementation. Characterization of project tasks. Designing gateways between a classical network and an IP QoS network. Calculation of streams for given classes of traffic sources. Assignment of traffic source classes to IP QoS network service classes. Selection of the routing algorithm and traffic placement in the IP QoS network. Calculation of the required bandwidth of links in the IP QoS network. Designing the SDH/DWDM network layer (variant A) and OTN/DWDM (variant B) that also support IP QoS network traffic. Designing OTN/DWDM networks with link failure. Calculation of quantitative quality parameters for the selected relationship. Designing traffic source control mechanisms. Acceptance and evaluation of completed projects.
Prerequisites and co-requisites	No requirements

Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Project	50.0%	100.0%

Recommended reading	Basic literature	Materials prepared by the lecturer available in electronic form in PDF files and in the form of a photocopy (on request).
	Supplementary literature	No requirements.
	eResources addresses	Adresy na platformie eNauczanie:

Example issues/ example questions/ tasks being completed	

Work placement	Not applicable