

关。GDAŃSK UNIVERSITY 多 OF TECHNOLOGY

Subject card

Electronics and Telecond October 2021	communication	S					
October 2021							
October 2021		Academic year of realisation of subject			2024/2025		
first-cycle studies		Subject group			Optional subject group Subject group related to scientific research in the field of study		
Full-time studies		Mode of delivery			at the university		
4		Language of instruction			Polish		
7		ECTS credits			4.0		
general academic profile		Assessment form			exam		
Department of Teleinformation Networks -> Faculty of Electronics, Telec				ommunications and Informatics			
Subject supervisor dr inż. Marcin Narloch							
Teachers		dr inż. Marcin Narloch dr inż. Ryszard Weisbrodt					
Lesson type	Lecture	Tutorial	Laboratory	Projec	t	Seminar	SUM
Number of study hours	30.0	0.0	15.0	0.0		0.0	45
Learning activity						udy	SUM
Number of study hours	45	4.0			51.0 100		100
			d signalling pro	tocols u	ised in a	circuit switchin	g and packet
Course out	Subject outcome			Method of verification			
[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 knows communication and signalling protocols used in circuit and packed switched networks, particularly for VoIP technology.			[SW1] Assessment of factual knowledge		
[K6_U31] can identify telecommunications network architectures, differentiates their areas and functional elements, evaluates the quality of service delivery, calculates parameters of functional elements		scenarios for typical signalling systems and protocols. Student			[SU2] Assessment of ability to analyse information [SU4] Assessment of ability to use methods and tools		
 Notion and classification of communications protocols 2. Notion and classification of signaling systems; communications protocols in signaling systems 3. Functions of communications protocols in OSI and Internet architecture 4. Protocols and protocol stacks in IP network 5. Characteristics and functions of physical layer protocols. 6. Characteristics and functions of data link layer protocols (LAPB, LAPB, PPP). 7. Characteristics, functions and procedures of network layer protocols 8. Characteristics, functions and procedures of network layer protocols 8. Characteristics, functions and procedures of network layer protocols 8. Characteristics, functions and procedures of network transport layer protocols: TCP, UDP 9. Characteristics and functions protocols to support routing functions BGP, OSPF 10. Characteristics, functions and procedures RSVP protocol 11. Protocols in MPLS networks. 12. Signalization systems for PSTN/ISDN telecommunication networks: DSS1 and SS7 13. Signalization system DSS1: functions, types and structures of signalling messages 14. Signalization system DSS1: basic signalization procedures. 15. Signalization system SS7. Signalling network architecture 16. Signalization system SS7 ISUP: functions, types and structures of signalling messages 17. Basic signalization procedures for PSTN/ISDN network. 18. Signalization system SS7 MAP. Messages and basic signalization procedures 19. Signalization system SS7: SCCP and TACP protocols. Messages and basic signalization procedures 20. Call handling scenarios for signalization network 21. Signaling protocols utilized in VoIP technology 22. H.323 standard: types and structures of signalization messages. 26. Basic call handling procedures in H.323 24. Cooperation between network with SS7 ISUP and IP network 25. Signaling protocol SIP: functions, types and structures 30. Basic call handling procedures in SIP. 27. Cooperation between SIP and H.323 28. Signaling protocol NSIS 29. Standard of MGCP protocol: m							
	4 7 general academic product Department of Telein Subject supervisor Teachers Lesson type Number of study hours E-learning hours inclut Learning activity Number of study hours Obtaining knowledge networks particularly Course outt [K6_W35] Knows the the technique of sign transmission, operatt telecommunications multimedia services for providing them [K6_U31] can identifit telecommunications architectures, differe areas and functional evaluates the quality delivery, calculates for functional elements 1. Notion and classific communications protocol Characteristics, funct procedures of networs support routing functi Protocols in MPLS ne and SS7 13. Signalization system network architecture messages and basic Signaling p	4 7 general academic profile Department of Teleinformation Network Subject supervisor Teachers Lesson type Lecture Number of study hours 30.0 E-learning hours included: 0.0 Learning activity Participation i classes inclue plan Number of study hours 45 Obtaining knowledge regarding commetworks particularly for VoIP technology hours Course outcome [K6_W35] Knows the concepts of the technique of signal transmission, operation of telecommunications networks and multimedia services and the rules for providing them [K6_U31] can identify telecommunications network architectures, differentiates their areas and functional elements, evaluates the quality of service delivery, calculates parameters of functional elements 1. Notion and classification of commonications protocols in signalii internet architecture 4. Protocols an physical layer protocols. 6. Characte Characteristics, functions and proce procedures of network transport lays support routing functions BGP, OSP Protocols in MPLS networks. 12. Sig and SS7 13. Signalization system DS1: basic si network architecture 16. Signalization protocols and SS7 13. Signalization system DS1: basic si network architecture 16. Signalization protocols and IP network 25. Signaling protocols Basic call handling procedures in SI 29. Standard of MGCP protocol: me procedures in MGCP	Induct of designation 4 Language of ECTS cred 7 ECTS cred general academic profile Assessmer Department of Teleinformation Networks -> Faculty Subject supervisor dr inz. Marcin Teachers dr inz. Marcin dr inz. Ryszai Lesson type Lecture Tutorial Number of study hours 30.0 0.0 E-learning hours included: 0.0 Learning activity Participation in didactic classes included in study plan Number of study hours 45 Student know and signaling transmission, operation of the technique of signal transmission, operation of telecommunications networks and multimedia services and the rules for providing them Student analy scenarios for systems and functional elements, evaluates the quality of service delivery, calculates parameters of functional elements Student analy scenarios for systems and functional elements, evaluates the quality of service delivery, calculates parameters of functional elements Student analy scenarios for systems and functions and procedures of network architecture 4. Protocols and protocols and protocols in MPLS networks. 12. Signalization protocols: To suport routing functions BGP, OSPF 10. Character Protocols in MPLS networks. 12. Signalization system DS1: functions Signalization system DS1: functions signalization procedu	4 Language of instruction 7 ECTS credits general academic profile Assessment form Department of Teleinformation Networks -> Faculty of Electronics Subject supervisor dr inż. Marcin Narloch Teachers dr inż. Marcin Narloch Lesson type Lecture Tutorial Lesson type Lecture Tutorial Lesson type Lecture Tutorial Lesson type Participation in didactic classes included in study plan Participation in consultation h Number of study hours 945 4.0 Obtaining knowledge regarding communication and signalling pronetworks particularly for VolP technology. Student knows communicati and signalling pronetworks particularly for VolP technology. Course outcome Student knows communicati and asignalling protocols used in transmission, operation of the technique of signal transmission, operation of the technique of signal furgerotocols is signaling systems and protocols. Stud evolutes their correctness. IK6_U31] can identify Student analyses connectior scenarios for typical signallific systems and protocols. Stud evolutes their correctness. Student analyses Student analyses consector signal analysis. 1. Notion and classification of communications protocols 2. Notior communications protocols in signaling systems SF Istuctions o	4 Language of instruction 7 ECTS credits general academic profile Assessment form Department of Teleinformation Networks -> Faculty of Electronics, Teleco Subject supervisor dr inz. Marcin Narloch Teachers dr inz. Marcin Narloch Lesson type Lecture Tutorial Laboratory Project Number of study 30.0 0.0 15.0 0.0 Number of study 30.0 0.0 15.0 0.0 Number of study Participation in didactic classes included in study plan Participation in consultation hours Number of study 45 4.0 4.0 Obtaining knowledge regarding communication and signalling protocols used in atransmission, operatic of the technology. Student knows communication and signalling protocols used in circuit and packed switched networks, particularly for VoIP technology. [K6_W35] Knows the concepts of the technology. Student analyses connection scenarios for typical signalling systems and protocols. Student recognizes messages content and evaluates their correctness. systems and functional elements, evaluates the quality of service delivery, calculates parameters of functional elements, support routing functions and procedures of network layer protocols. Student services, functions and procedures of network layer protocols. Student analyses.	Full-time studies Mode of delivery at the 4 Language of instruction Polish 7 ECTS credits 4.0 general academic profile Assessment form exam Department of Teleinformation Networks -> Faculty of Electronics, Telecommuni Subject supervisor dr in2. Marcin Narloch Teachers dr in2. Marcin Narloch dr in2. Ryszard Weisbrodt Lesson type Lecture Tutorial Laboratory Project Number of study 30.0 0.0 15.0 0.0 Learning nours included: 0.0 E-learning nours included: 0.0 E-learning nours included: 0.0 E-learning nours included: 0.0 E-learning nours included: 0.0 Self-st Learning activity Participation in didactic classes included in study plan Participation in classes included in study plan Self-st Number of study 45 4.0 51.0 Number of study 45 4.0 Student knows communication and signalling protocols used in creating acked switched networks, particularly for VoIP technology. Course outcome Student knows connection schworks and mutimedia serviccas and the rules for providing them S	research in the field Full-time studies Mode of delivery at the university 4 Language of instruction Polish 7 ECTS credits 4.0 general academic profile Assessment form exam Department of Teleinformation Networks -> Faculty of Electronics, Telecommunications and In Subject supervisor dr inz. Marcin Narloch Teachers dr inz. Marcin Narloch dr inz. Ryszard Weisbrodt Lesson type Lecture Tutorial Laboratory Project Seminar Number of study 30.0 0.0 15.0 0.0 0.0 Learning hours included: 0.0 Elearning hours included: 0.0 Elearning throws included: 0.0 Elearning hours included: 0.0 51.0 Learning activity Participation in didactic classes included in study plan Subject outcome Method of veri throws communication and signalling protocols used in circuit switchin and signalling protocols. Used in anayse information an signalling systems and protocols concepts of the technology. Koldent throws communication sprotocols in CO throme tensors dyspinal systens and protocols 2. Notion and classificatin of si

Prerequisites and co-requisites	no requirements					
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade			
	exam	50.0%	60.0%			
	laboratory exercises	50.0%	40.0%			
Recommended reading	Basic literature	Material prepared by the lecturer in the form of xeroxcopy. Manual in the form of xeroxcopy.				
	Supplementary literature	1. Bromirski M. ,Telefonia VoIP,. Wydawnictwo BTC, Warszawa 2006.				
		 Johnston A. B., SIP: Understanding the Session Initiation Protocol, Artech House 2009. Danilewicz G., Kabaciński M., System sygnalizacji nr 7 Protokoły standaryzacja zastosowania, WKiŁ 2005. 				
	eResources addresses	Adresy na platformie eNauczanie:				
Example issues/ example questions/ tasks being completed						
Work placement	Not applicable					