



## Subject card

Subject name and code	Networks and Services Management, PG_00048363						
Field of study	Electronics and Telecommunications						
Date of commencement of studies	February 2023	Academic year of realisation of subject			2023/2024		
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	2	Language of instruction			Polish		
Semester of study	3	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 inż. Marcin Narloch				
	Teachers		dr inż. Marcin Narloch				
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	0.0	0.0	0.0	15.0	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		1.0		9.0	25
Subject objectives	Student understands notion of network and information services management. Student characterises functional areas of performance, accounting, security, configuration and faults. Student knows management layers of network elements, networks, services and network enterprise and time dependent model of operational, strategic and tactical management. Student describes function of service management according to knowledge of service providing rules.						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[K7_W03] Knows and understands, to an increased extent, the construction and operating principles of components and systems related to the field of study, including theories, methods and complex relationships between them and selected specific issues - appropriate for the curriculum.	Student analyses functions of provided services and structure of presented management system according to selected subject of seminar.	[SW2] Assessment of knowledge contained in presentation
	[K7_W05] Knows and understands, to an increased extent, methods of process and function support, specific to the field of study.	Student analyses effectiveness of presented management system according to selected subject of seminar.	[SW2] Assessment of knowledge contained in presentation
	[K7_U06] can analyse the operation of components, circuits and systems related to the field of study; measure their parameters; examine technical specifications; interpret obtained results and draw conclusions	Student identifies importance of information stream control and routing for service quality and performance according to selected subject of seminar.	[SU2] Assessment of ability to analyse information [SU5] Assessment of ability to present the results of task
	[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	Student identifies methods and tools used for information stream control and routing for service quality and performance according to selected subject of seminar.	[SU2] Assessment of ability to analyse information [SU5] Assessment of ability to present the results of task
[K7_W06] Knows and understands, to an increased extent, the basic processes taking place in the life cycle of devices, facilities and technical systems.	Student analyses factors influencing quality of provided services according to selected subject of seminar.	[SW2] Assessment of knowledge contained in presentation	
Subject contents	1. Introduction to seminar. Goals and tasks of network and services management. 2. Concept of system management: manager-agent model. 3. Functional and informational architecture of management network. 4. Tasks and methods of fault and configuration management in circuit switched networks. 5. Tasks and methods of performance management in packet switched networks. 6. Access network management. 7. SS7 network management. 8. SDH network management. 9. Management of optical transport network. 10. Tasks and methods of fault and configuration management in packet switched networks. 11. Management tools and protocols in IP network. 12. Management of performance in IP network. 13. Configuration and fault management in IP network. 14. Management of media gateway. 15. Principles of network and services management systems design.		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
		50.0%	100.0%
Recommended reading	Basic literature	1. Czarnecki P., Jajszczyk A., Lubacz J., Standardy zarządzania sieciami OSI/NM, TMN. Wydawnictwa EFP, Poznań 1996.	
	Supplementary literature	2. ITU-T, ETSI recommendations regarding network management area.  3. RFC IETF regarding network management area.	
	eResources addresses	Adresy na platformie eNauczenie: Zarządzanie sieciami i usługami informacyjnymi - edycja 2024 - Moodle ID: 37798 <a href="https://enauczenie.pg.edu.pl/moodle/course/view.php?id=37798">https://enauczenie.pg.edu.pl/moodle/course/view.php?id=37798</a>	
Example issues/ example questions/ tasks being completed	1. Configuration and fault management in circuit switched networks.  2. Performance management in packet switched networks.  3. SNMP protocol.		
Work placement	Not applicable		