GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Multimedia Services & Applications, PG_00047955		
Field of study	Informatics		
Date of commencement of studies	October 2024	Academic year of realisation of subject	2027/2028
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	4	Language of instruction	Polish
Semester of study	7	ECTS credits	3.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Department of Computer Communications -> Faculty of Electronics, Telecommunications and Informatics		
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Michał Hoeft	
	Teachers	dr inż. Michał Hoeft	

Lesson types and methods of instruction							
	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	0.0	15.0	15.0	45
	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	45	3.0	27.0	75

Subject objectives	The aim of the course is to give students possibility to acquire knowledge and practical skills related to the design and implementation of multimedia services and applications.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K6_W44] knows and understands, to an advanced extent, architecture, design principles and methods of hardware and software support for local and distributed information systems, including computing systems, databases, computer networks and information applications, as well as the principles of human-computer interaction, the operation and evaluation criteria of data processing, storage and transfer methods, including computational algorithms, artificial intelligence and data mining as well as standards and methods of IT systems administration, monitoring of processes and robustness to undesirable phenomena and activities	A student knows the architectures that can be used in the implementation of multimedia application and services, knows the methods of voice and video service quality evaluation.	[SW3] Assessment of knowledge contained in written work and projects [SW1] Assessment of factual knowledge
[K6_U03] can design, according to required specifications, and make a simple 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	A student is skilled to implement a simple multimedia service or application	[SU4] Assessment of ability to use methods and tools [SU3] Assessment of ability to use knowledge gained from the subject
[K6_U04] can apply knowledge of programming methods and techniques as well as select and apply appropriate programming methods and tools in computer software development or programming devices or controllers using microprocessors or programmable elements or systems specific to the field of study	A Student uses frameworks, deployment methods, monitoring tools for implementation of multimedia services.	[SU1] Assessment of task fulfilment [SU5] Assessment of ability to present the results of task

Subject contents

1. Multimedia and Multimedia Services,2. Infrastructure for multimedia services,3. Foundation of Coding and Compression of Voice Signals,4. Foundation of Coding and Compression of Video Signals,5. Signaling Protocols (Including SIP and SDP),6. Transport Protocols (Including RTP),7. Conferencing Services,8. Video of Demand Services,9. Examples of multimedia services vulnerabilities,10. Security of Multimedia Services, 11. Requirements of Real-Time Applications,12. Evaluation of Quality of Multimedia Service,13. Practical aspects of multimedia data transmissions,14. Multimedia application architecture,15. Multimedia in web applications.

Prerequisites and co-requisites

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
test	50.0%	33.0%
project	50.0%	34.0%
seminar	50.0%	33.0%

Recommended reading

Basic literature	Henryk Krawczyk, Sylwester Kaczmarek, Krzysztof Nowicki. (2018). Aplikacje i usługi a technologie sieciowe, Wydawnictwo Naukowe PWN 2018
Supplementary literature	Bruce Hartpence: Pcket Guide to Voice over IP: A system administrator's guide to VoIP technologies, O'Reilly Media; 1 edition (2013)Sivannarayana Nagireddi: VoIP VOICE AND FAX SIGNAL PROCESSING, John Wiley & Sons, 2008
eResources addresses	Adresy na platformie eNauczanie:

Example issues/ example questions/ tasks being completed	VoIP system architectureMultimedia services implementationPresentation of QoS mechanisms
Work placement	Not applicable

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