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 2025		Academic year of realisation of subject	2028/2029			
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 -> Wydziały Politechniki Gdańskiej						
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_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.	[SU5] Assessment of ability to present the results of task [SU1] Assessment of task fulfilment
[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	[SU3] Assessment of ability to use knowledge gained from the subject [SU4] Assessment of ability to use methods and tools
[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.	[SW1] Assessment of factual knowledge [SW3] Assessment of knowledge contained in written work and projects

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
seminar	50.0%	33.0%
project	50.0%	34.0%
test	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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