GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Multimedia Technology, PG_00047919					
Field of study	Electronics and Telecommunications					
Date of commencement of studies	October 2023		Academic year of realisation of subject		2024/2025	
Education level	first-cycle studies		Subject group		Obligatory subject group in the field of study	
					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	4		ECTS credits		3.0	
Learning profile	general academic profile		Assessment form		assessment	
Conducting unit	Department of Multimedia Systems -> Faculty of Electronics, Telecommunications and Informatics					
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Piotr Odya				
	Teachers	dr inż. Piotr Odya				

Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	30.0	0.0	0.0	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 is to familiarize students with the multimedia data procesing and transmission.

Learning outcomes			
	Course outcome	Subject outcome	Method of verification
	[K6_U05] can plan and conduct experiments related to the field of study, including computer simulations and measurements; interpret obtained results and draw conclusions	The student uses tools necessary to create computer graphics. The student compresses audio and video files.	[SU2] Assessment of ability to analyse information [SU4] Assessment of ability to use methods and tools
	[K6_W03] Knows and understands, to an advanced 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	The student can propose solutions for multimodal interfaces. The student describes stages of image, sound and video compression.	[SW1] Assessment of factual knowledge [SW3] Assessment of knowledge contained in written work and projects
	[K6_W05] Knows and understands, to an advanced extent, methods of supporting processes and functions, specific to the field of study	The student selects methods of rendering and animation of objects according to needs. Student describes the principles of multimedia databases.	[SW1] Assessment of factual knowledge [SW3] Assessment of knowledge contained in written work and projects
	[K6_U07] can apply methods of process and function support, specific to the field of study	The student chooses the compression format and file format depending on the needs.	[SU3] Assessment of ability to use knowledge gained from the subject [SU4] Assessment of ability to use methods and tools
	[K6_W35] Knows the concepts of the technique of signal transmission, operation of telecommunications networks and multimedia services and the rules for providing them	The student classifies elements of multimedia communication and its types.	[SW1] Assessment of factual knowledge [SW3] Assessment of knowledge contained in written work and projects

Subject contents	1. Introduction. History of multimedia communication development. 2. Multimedia content types and elements. 3. Computer graphics fundamentals raster and vector images 4. Audio, video, and multimedia content formats 5. Fundamentals of audio, image & video compression 6. Multimedia transport protocols. Multimedia services. 7. Multimedia content distribution. 8. Multimedia studio and broadcasting center. 9. Multimedia databases. Querying, navigating, browsing of multimedia database content 10. Image rendering 11. Animation of computer graphic 12. Multimodal interfaces 13. Stereoscopy, holography, Virtual Reality 14. Future development trends. 15. Lecture recapitulation and students' progress checking
Prerequisites and co-requisites	No requirements

Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Practical exercise	51.0%	50.0%
	Final test	51.0%	50.0%

Recommended reading	Basic literature	Alicja Wieczorkowska: Multimedia. Podstawy teoretyczne i zastosowania praktyczne., PJWSTK, ISBN: 978-83-89244-67-3, 2008, Kategorie: Informatyka, Multimedia, 336 stron Anna Korzyńska, Małgorzata Przytulska: Przetwarzanie obrazów. Ćwiczenia., PJWSTK, 2006, ISBN: 978-83-89244-37-6, Kategorie: Informatyka, Multimedia, Zawiera CD, 110 stron Andrzej Czyżewski: Dźwięk cyfrowy. Wybrane zagadnienia teoretyczne, technologia, zastosowania., Exit, 2001, ISBN: 978-83-87674-08-3, Kategorie: Informatyka, Multimedia, Dźwięk cyfrowy, 552 strony, format B5 Jean-Philippe Thiran, Ferran Marques, Harve Boulard, Multimodal Signal Processing, Academic Press, 2010. Nigel Chapman, Jenny Chapman, Digital Multimedia, Wiley, 2009. Parag Havaldar, Gerard Medioni, Multimedia Systems, Course Technology, 2010.
	Supplementary literature	No requirements
	eResources addresses	Adresy na platformie eNauczanie:

Example issues/ example questions/ tasks being completed	
Work placement	Not applicable