



## Subject card

Subject name and code	Multimedia Technology, PG_00047919						
Field of study	Electronics and Telecommunications						
Date of commencement of studies	October 2022	Academic year of realisation of subject				2023/2024	
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 Ody				
	Teachers		dr inż. Piotr Ody				
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 processing and transmission.						
Learning outcomes	Course outcome	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	The student classifies elements of multimedia communication and its types.			[SW3] Assessment of knowledge contained in written work and projects [SW1] Assessment of factual knowledge		
	[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.			[SU4] Assessment of ability to use methods and tools [SU3] Assessment of ability to use knowledge gained from the subject		
	[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.			[SW3] Assessment of knowledge contained in written work and projects [SW1] Assessment of factual knowledge		
	[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.			[SW3] Assessment of knowledge contained in written work and projects [SW1] Assessment of factual knowledge		
	[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.			[SU4] Assessment of ability to use methods and tools [SU2] Assessment of ability to analyse information		

Subject contents	<ol style="list-style-type: none"> <li>1. Introduction. History of multimedia communication development.</li> <li>2. Multimedia content types and elements.</li> <li>3. Computer graphics fundamentals raster and vector images</li> <li>4. Audio, video, and multimedia content formats</li> <li>5. Fundamentals of audio, image &amp; video compression</li> <li>6. Multimedia transport protocols. Multimedia services.</li> <li>7. Multimedia content distribution.</li> <li>8. Multimedia studio and broadcasting center.</li> <li>9. Multimedia databases. Querying, navigating, browsing of multimedia database content</li> <li>10. Image rendering</li> <li>11. Animation of computer graphic</li> <li>12. Multimodal interfaces</li> <li>13. Stereoscopy, holography, Virtual Reality</li> <li>14. Future development trends.</li> <li>15. Lecture recapitulation and students' progress checking</li> </ol>			
Prerequisites and co-requisites	No requirements			
Assessment methods and criteria	Subject passing criteria		Passing threshold	Percentage of the final grade
	Final test		51.0%	50.0%
	Practical exercise		51.0%	50.0%
Recommended reading	Basic literature		<p>Alicja Wieczorkowska: Multimedia. Podstawy teoretyczne i zastosowania praktyczne., PJWSTK, ISBN: 978-83-89244-67-3, 2008, Kategorie: Informatyka, Multimedia, 336 stron</p> <p>Anna Korzyńska, Małgorzata Przytułska: Przetwarzanie obrazów. Ćwiczenia., PJWSTK, 2006, ISBN: 978-83-89244-37-6, Kategorie: Informatyka, Multimedia, Zawiera CD, 110 stron</p> <p>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</p> <p>Jean-Philippe Thiran, Ferran Marques, Harve Boulard, Multimodal Signal Processing, Academic Press, 2010.</p> <p>Nigel Chapman, Jenny Chapman, Digital Multimedia, Wiley, 2009.</p> <p>Parag Havaladar, Gerard Medioni, Multimedia Systems, Course Technology, 2010.</p>	
	Supplementary literature		No requirements	
	eResources addresses			
Example issues/ example questions/ tasks being completed				
Work placement	Not applicable			