



Subject card

Subject name and code	, PG_00064558						
Field of study	Mechanical and Medical Engineering						
Date of commencement of studies	October 2022		Academic year of realisation of subject		2025/2026		
Education level	first-cycle studies		Subject group				
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		1.0		
Learning profile	general academic profile		Assessment form		assessment		
Conducting unit	Division Of Heating Ventilation Air Conditioning And Refrigeration -> Institute Of Energy -> Faculty Of Mechanical Engineering And Ship Technology -> Wydziały Politechniki Gdańskiej						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. inż. Michał Klugmann				
	Teachers						
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	0.0	0.0	0.0	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		0.0		0.0	15
Subject objectives	The aim of the course is to comprehensively familiarize students with the techniques of recording and reproducing image and sound, starting from the history and creation of these techniques, ending with the latest tools. This will allow you to understand visualization measurement methods, their nuances and sources of errors. Particular emphasis will be placed on how computers work in image generation and analysis and on how a digital image is constructed.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
Subject contents	1. A historical outline of sound recording techniques, photography, cinematography and television in the analog era. 2. A shortened history of computers in terms of the ability to generate images and sounds. 3. Principle of operation of a digital computer, method of recording and generating digital sound, construction of a digital image. Discussion from a historical perspective - how graphic modes and formats were developed, etc. 4. Digital techniques for recording, processing and interpreting sound and image: static photography, video, 3D, 360 degrees, drones. related techniques: high-speed photos, thermal imaging, liquid crystal thermography.						
Prerequisites and co-requisites							
Assessment methods and criteria	Subject passing criteria		Passing threshold		Percentage of the final grade		
	Essay		56.0%		100.0%		
Recommended reading	Basic literature		No English literature.				
	Supplementary literature		Archival magazines about computers and audio-video techniques.				
	eResources addresses		Adresy na platformie eNauczanie:				

Example issues/ example questions/ tasks being completed	Comparison of digital and analog signal transmission. Issues of digitization of sound and image. Lossless and lossy image and sound recording formats - what are their origins and features? Light sources and their features.
Work placement	Not applicable

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