



## Subject card

Subject name and code	Signal analysis, PG_00060218						
Field of study	Technical Physics						
Date of commencement of studies	October 2023		Academic year of realisation of subject		2024/2025		
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	2		Language of instruction		Polish		
Semester of study	3		ECTS credits		3.0		
Learning profile	general academic profile		Assessment form		assessment		
Conducting unit	Institute of Physics and Applied Computer Science -> Faculty of Applied Physics and Mathematics						
Name and surname of lecturer (lecturers)	Subject supervisor		dr inż. Bartosz Reichel				
	Teachers						
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	0.0	0.0	0.0	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		5.0		25.0	75
Subject objectives	Introduction to signal analysis (sound, image, multidimensional signal)						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K6_W07] Has knowledge of the construction and operation of physical instruments, measurement and research equipment.		Know how the spectrum analyzer		[SW1] Assessment of factual knowledge		
	[K6_K01] Understands the need to learn and improve professional and personal competencies. Can inspire and organize other people's learning process		Make measurements in group		[SK1] Assessment of group work skills		
	[K6_U07] Can present basic facts within the scope of physics and other scientific disciplines in a clear manner.		Prepare a presentation		[SU4] Assessment of ability to use methods and tools		
	[K6_W05] Has knowledge of programming methodology and techniques, and the use of selected IT tools in physics and technology.		Know how to implement FFT		[SW1] Assessment of factual knowledge		
	[K6_U08] Can prepare written works and speeches in Polish and English, concerning detailed issues of physics and related fields, and scientific disciplines.		Prepare a presentation		[SU1] Assessment of task fulfilment		
Subject contents	1) Signal Definition 2) Signal Acquisition/Measurement Methods 3) Signal Analysis Methods						
Prerequisites and co-requisites	none						
Assessment methods and criteria	Subject passing criteria		Passing threshold		Percentage of the final grade		
	Lab		50.0%		50.0%		
	Test		50.0%		50.0%		
Recommended reading	Basic literature		Signal Analysis: Time, Frequency, Scale, and Structure 1st Edition by Ronald L. Allen (Author), Duncan Mills (Author)				

	Supplementary literature	none
	eResources addresses	Adresy na platformie eNauczanie:
Example issues/ example questions/ tasks being completed	Types of Discrete Fourier Transforms Multiresolution Analysis Scheme Prove Shannon's Sampling Theorem	
Work placement	Not applicable	

Document generated electronically. Does not require a seal or signature.