

。 GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Physical lab, PG_00047925								
Field of study	Biomedical Engineering								
Date of commencement of studies	October 2023		Academic year of realisation of subject			2025/2026			
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	3		Language of instruction			Polish			
Semester of study	5		ECTS credits			2.0			
Learning profile	general academic profile		Assessment form			assessment			
Conducting unit	Division of Complex Systems Spectroscopy -> Institute of Physics and Applied Computer Science -> Faculty of Applied Physics and Mathematics							ence -> Faculty	
Name and surname	Subject supervisor		dr Brygida Mielewska						
of lecturer (lecturers)	Teachers								
Lesson types and methods	Lesson type	Lecture	Tutorial	Laboratory	Projec	t	Seminar	SUM	
of instruction	Number of study hours	0.0	0.0	15.0	0.0		0.0	15	
	E-learning hours included: 0.0								
Learning activity and number of study hours	Learning activity	Participation in classes includ plan	n didactic ed in study	Participation in consultation hours		Self-study		SUM	
	Number of study hours	15		2.0		33.0		50	
Subject objectives	Students are familiarized with the mathematical description of physical phenomena and they have to perform experiments regarding chosen physical problems. Students are taught how to apply physical phenomena in engineering and technology. Students are taught data acquisition as well as data and error analysis followed by drawing proper conclusions.								
Learning outcomes	Course outcome		Subject outcome			Method of verification			
	[K6_U02] can perform tasks related to the field of study in an innovative way as well as solve complex and nontypical problems, applying knowledge of physics, in changing and not fully predictable conditions		student is able to present the results of measurements in form of tabels and graphs, to analyse the results and draw conclusions			[SU5] Assessment of ability to present the results of task			
	[K6_U05] can plan and conduct experiments related to the field of study, including computer simulations and measurements; interpret obtained results and draw conclusions		studets is able to carry out the series of measurements according to the given tutorial			[SU1] Assessment of task fulfilment			
Subject contents	Main topics of experiments: - Study of centrifugal force, - Study of simple and damped harmonic motion, - Determination of time in collision, - Measurement of the velocity of sound, - Determination of dielectric constant, - Study of the Earth's magnetic field, - Determination properties materials by electromagnetic waves, - Analysis of emission spectra of gases. Students know basic physical laws, they can measure physical quantities using basic measuring tools, and								
Prerequisites and co-requisites	Students know basic physical laws, they can measure physical quantities using basic measuring tools, and they are able to perform analysis of errors.								

Assessment methods	Subject passing criteria	Passing threshold	Percentage of the final grade			
and criteria	Reports	100.0%	40.0%			
	Tests	100.0%	40.0%			
	Organization of experiments	100.0%	20.0%			
Recommended reading	Basic literature	 M. Zubek "Experiments in physic" Halliday, Resnick, Walker - "Fundamentals of physics" 				
	Supplementary literature	1. K. A. Tsokos - "Physics for IB diploma".				
	eResources addresses	Adresy na platformie eNauczanie:				
Example issues/ example questions/ tasks being completed	1) Explain the origin of emission spectrum of atomic hydrogen.					
	2) What is the method of simple linear regression?					
Work placement	Not applicable					

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