



Subject card

Subject name and code	Physics in the experiment, PG_00063139						
Field of study	Materials Engineering						
Date of commencement of studies	October 2024	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	1	Language of instruction			Polish		
Semester of study	1	ECTS credits			4.0		
Learning profile	general academic profile	Assessment form			assessment		
Conducting unit	Zakład nowych materiałów funkcjonalnych do konwersji energii -> Instytut Nanotechnologii i Inżynierii Materiałowej -> Faculty of Applied Physics and Mathematics						
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. inż. Beata Bochentyn					
	Teachers	Piotr Okoczuk dr hab. inż. Beata Bochentyn					
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	30.0	0.0	0.0	0.0	60
	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	60		5.0		35.0	100
Subject objectives	Familiarization with the basic laws of classical physics, with particular emphasis on broadly understood mechanics and analysis of thermal phenomena. Acquisition of skills in analyzing physical phenomena and solving technical problems based on the laws of physics.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K6_U06] can integrate obtained information, interpret it and draw conclusions, as well as formulate and justify opinions.		The student prepares to solve physics problems using the recommended textbooks. Recalls basic physical laws and understands them.		[SU3] Assessment of ability to use knowledge gained from the subject [SU2] Assessment of ability to analyse information [SU5] Assessment of ability to present the results of task		
	[K6_U01] Can properly use selected analytical, simulation and experimental methods, as well as devices for measuring the fundamental properties of materials and technological processes.		The student acquires the ability to analyze experimental data. He can analyze physical phenomena by making the necessary drawings. He obtains the final results by deriving them from the laws of physics. Applies unit conversions and performs numerical calculations.		[SU4] Assessment of ability to use methods and tools [SU2] Assessment of ability to analyse information [SU3] Assessment of ability to use knowledge gained from the subject		
	[K6_W02] has knowledge of physics and chemistry, useful for formulating and solving simple problems within the scope of materials science		The student knows the basic issues of classical mechanics, kinematics and dynamics of translational and rotational motion. He can describe oscillating and wave motion, he knows the basic concepts of thermodynamics.		[SW1] Assessment of factual knowledge		
Subject contents	Physics in Experiment introduces students to issues related to various branches of physics, which will be explained based on experimental demonstrations. Topics of the classes are: rectilinear uniform and uniformly changing motion, projections: vertical, horizontal and oblique, Newton's dynamics of the translational motion of a material point, the principles of conservation of energy and momentum in translational motion, rotational motion of a material point and a rigid body, simple, damped and forced oscillatory motion, mechanical waves, thermodynamics and thermal phenomena.						

Prerequisites and co-requisites	non		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	passing the exercises	50.0%	50.0%
	writing exam	50.0%	50.0%
Recommended reading	Basic literature	<p>[1] K. Jeziński, K. Sierański, I. Szlufarska, <i>Fizyka -- Repetytorium, zadania z rozwiązaniami, kurs powtórkowy dla studentów I roku i uczniów szkół średnich</i>, Oficyna Wydawnicza Scripta, Wrocław 2005</p> <p>[2] M. Herman, A. Kalestyński, L. Widomski, <i>Podstawy Fizyki dla kandydatów na wyższe uczelnie i studentów</i>, WN PWN, Warszawa 2004</p> <p>[3] J. Jędrzejewski, W. Kruczek, A. Kujawski, <i>Zbór zadań z fizyki dla uczniów szkół średnich i kandydatów na studia</i>, WNT, Warszawa, 2000</p> <p>[4] D. Halliday, R. Resnick, J. Walker, <i>Podstawy Fizyki</i>, PWN, Warszawa</p>	
	Supplementary literature	<p>[1] D. Halliday, R. Resnick, J. Walker, <i>Podstawy Fizyki, Zbiór zadań</i>, PWN, Warszawa</p> <p>[2] Zbiór zadań z fizyki, skrypt Politechniki Gdańskiej, http://www.mif.pg.gda.pl/zz/</p> <p>[3] W. Moebs, S. J. Ling, J. Sanny, <i>Fizyka dla szkół wyższych</i>, Tom 1, OpenStax Polska</p> <p>https://openstax.org/details/books/fizyka-dla-szk%C3%B3%C5%82-wy%C5%BCszych-tom-1</p>	
	eResources addresses	Adresy na platformie eNauczenie:	
Example issues/ example questions/ tasks being completed			
Work placement	Not applicable		

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