



## Subject card

Subject name and code	Physics 1, PG_00061674						
Field of study	Recycling and Energy Recovery						
Date of commencement of studies	October 2025		Academic year of realisation of subject		2025/2026		
Education level	first-cycle studies		Subject group		Obligatory subject group 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		5.0		
Learning profile	general academic profile		Assessment form		assessment		
Conducting unit	Institute Of Nanotechnology And Materials Engineering -> Faculty Of Applied Physics And Mathematics -> Wydziały Politechniki Gdańskiej						
Name and surname of lecturer (lecturers)	Subject supervisor		dr inż. Kamil Kolincio				
	Teachers						
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		60.0	125
Subject objectives	Learning the basic laws of classical physics. Analysys of physical phenomena and solving technical problems based on the physical laws.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K6_U01] applies knowledge of mathematics and other exact sciences and engineering disciplines to solve theoretical, engineering and technological problems and issues.		Student can analyze physical problems, perform calculations and knows how to formulate conclusions.		[SU2] Assessment of ability to analyse information [SU3] Assessment of ability to use knowledge gained from the subject [SU4] Assessment of ability to use methods and tools		
	[K6_W01] demonstrates knowledge and understanding of mathematics and other exact sciences and engineering disciplines at the level necessary to solve theoretical, engineering and technological problems and issues.		Student knows fundamental problems of classical physics and understands physical laws.		[SW1] Assessment of factual knowledge		

Subject contents	Kinetics of progresive and rotational motion.  Newton's laws.Dynamics of progresive and rotational motion.  Work and energy. Principles of conservation of momentum and energy.  Harmonic and wave motion.  Properties of solids and liquids.  Thermodynamisc: first and second laws of thermodynamisc.		
Prerequisites and co-requisites	Course for Students who in secondary school completed mathematisc and physics at the advanced level.		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	3/4 tests per semester	50.0%	100.0%
Recommended reading	Basic literature	University Physics, Openstax  Resnick, Halliday, Walker, "Fundamentals of physics"	
	Supplementary literature	J. Orear, "Physics"	
	eResources addresses	Adresy na platformie eNauczanie:	
Example issues/ example questions/ tasks being completed	- The stone was thrown at velocity $v$ at an angle of $\theta$ to the horizontal. Write down the equations of movement and determine the throw range.  - Two spheres with masses $m_1$ and $m_2$ , and velocities $v_1$ and $v_2$ collide centrally and elastically. Determine the velocity of the balls after the collision.		
Work placement	Not applicable		

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