



Subject card

Subject name and code	Physics 1, PG_00061674						
Field of study	Recycling and Energy Recovery						
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		
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	Instytut Nanotechnologii i Inżynierii Materiałowej -> Faculty of Applied Physics and Mathematics						
Name and surname of lecturer (lecturers)	Subject supervisor		dr inż. Anna Rybicka				
	Teachers		dr inż. Kamil Kolincio				
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_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		
	[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.			[SU4] Assessment of ability to use methods and tools [SU3] Assessment of ability to use knowledge gained from the subject [SU2] Assessment of ability to analyze information		

Subject contents	<p>Kinetics of progressive and rotational motion.</p> <p>Newton's laws. Dynamics of progressive and rotational motion.</p> <p>Work and energy. Principles of conservation of momentum and energy.</p> <p>Harmonic and wave motion.</p> <p>Properties of solids and liquids.</p> <p>Thermodynamics: first and second laws of thermodynamics.</p>		
Prerequisites and co-requisites	Course for Students who in secondary school completed mathematics 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 eNauczenie:	
Example issues/ example questions/ tasks being completed	<p>- The stone was thrown at velocity v at an angle of θ to the horizontal. Write down the equations of movement and determine the throw range.</p> <p>- 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.</p>		
Work placement	Not applicable		