



## Subject card

Subject name and code	Physics I, PG_00050089						
Field of study	Geodesy and Cartography						
Date of commencement of studies	October 2021		Academic year of realisation of subject		2021/2022		
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		4.0		
Learning profile	general academic profile		Assessment form		assessment		
Conducting unit	Department of Solid State Physics -> Faculty of Applied Physics and Mathematics						
Name and surname of lecturer (lecturers)	Subject supervisor		dr inż. Anna Rybicka				
	Teachers		dr inż. Anna Rybicka				
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						
	Adresy na platformie eNauczanie: FIZYKA I - GEODEZJA I KARTOGRAFIA_21/22 - Moodle ID: 15155 <a href="https://enauczanie.pg.edu.pl/moodle/course/view.php?id=15155">https://enauczanie.pg.edu.pl/moodle/course/view.php?id=15155</a>						
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		0.0		40.0	100
Subject objectives	Learning the basic laws of classical physics. Analysis of physical phenomena and solving technical problems based on the physical laws.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K6_U01] can apply the principles of physics and mathematics to a simple verification of measurement and computational methods and their results		The student is able to analyze experimental results and formulate conclusions based of them.		[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] has basic knowledge and understands the concepts of physics which allow to use optical and immersive instruments as well as positioning and satellite imaging		The student knows fundamental problems od classical physics; understand physical laws and on their basis can analyze technical problems.		[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.		
	Elektrostatics. Coulomb's and Gauss's laws.		
	Electric current. Ohm's and Kirchhoff's laws.		
	The magnetic fielsd. , Ampere's, Biot's - Savart's, Faraday's laws.		
	Maxwell's equations.		
Prerequisites and co-requisites	Course for students who completed mathematisc and physics at the advanced level in the secondary school.		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	test II	50.0%	50.0%
	test I	50.0%	50.0%
Recommended reading	Basic literature	e-book: UNIVERSITY PHYSICS ( <a href="http://www.ftims.pg.edu.pl/Studenci/Materialy_dydaktyczne">www.ftims.pg.edu.pl/Studenci/Materialy_dydaktyczne</a> )  Resnick, Halliday, Walker, FUNDAMENTALS OF PHYSICS, John Wiley&Sons, Inc.	
	Supplementary literature	Orear, PHYSICS, Macmillam Publishing Co.	
	eResources addresses	FIZYKA I - GEODEZJA I KARTOGRAFIA_21/22 - Moodle ID: 15155 <a href="https://enauczanie.pg.edu.pl/moodle/course/view.php?id=15155">https://enauczanie.pg.edu.pl/moodle/course/view.php?id=15155</a>	
Example issues/ example questions/ tasks being completed	Kinematic equations of motion in gravitational field.		
	Bodies systems - forces.		
	Elastic and inelastic collisions.		
	Rotary movement. Rolling without skidding.		
	Mathematical and physical pendulum.		
	Electric field strenght and potential.		
	Movement of charge in an electric and magnetic field.		
Work placement	Not applicable		