



Subject card

Subject name and code	Physics, PG_00049095						
Field of study	Materials Engineering, Materials Engineering, Materials Engineering						
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 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		5.0		
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 hab. inż. Jakub Karczewski				
	Teachers		dr hab. inż. Jakub Karczewski dr inż. Marta Przeźniak-Welenc				
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	30.0	0.0	0.0	0.0	30
	E-learning hours included: 0.0						
	Adresy na platformie eNauczanie: Fizyka I - Moodle ID: 18559 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=18559						
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	30		10.0		85.0	125
Subject objectives	Gaining knowledge of the laws of classical mechanics. Acquiring the ability to analyze physical phenomena and technical issues based on the laws of physics. Learning to solve basic tasks in the field of classical mechanics.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	K6_W02		Student uses the commonly used mathematical notation in physical calculations, solves problems using the vector distribution and addition technique, performs calculations using SI units. It is able to explain the basic concepts of the physics of classical mechanics		[SW1] Assessment of factual knowledge		
	K6_U05		The student can use various sources of knowledge and learn independently.		[SU3] Assessment of ability to use knowledge gained from the subject		
	K6_K01		The student can determine the basic problems of classical mechanics and is aware of the limitations of his basic knowledge. Can understand the need for further education in the field of physics and mathematics		[SK5] Assessment of ability to solve problems that arise in practice [SK2] Assessment of progress of work		

Subject contents	Classical mechanics 1.1. Elements of vector algebra. 1.2. Kinematics: basic concepts and kinematic quantities, linear rectilinear motion; uniformly variable motion; relativity of motion. 1.3. Dynamics: principles of dynamics; inertial and non-inertial reference systems; dynamics of the translational movement; 1.4. Principles of behavior in mechanics: work, energy and power; the principle of energy conservation; momentum; principle of conservation of momentum; moment of momentum; the principle of preserving momentum.		
Prerequisites and co-requisites	The course is dedicated to students who have completed a basic physics course in high school.		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	two tests during the semester	50.0%	100.0%
Recommended reading	Basic literature	1. D. Halliday, R. Resnick, J. Walker — Podstawy fizyki, t. 1, Wydawnictwo Naukowe PWN, Warszawa 2005 2. K. Jezierski, B. Kołodka, K. Sierański — Fizyka. Zadania z rozwiązaniami, cz. I-II (skrypt do ćwiczeń z fizyki dla studentów I roku wyższych uczelni), Oficyna Wydawnicza „Scripta”, Wrocław 2005 3. Jędrzejewski J., Kruczek W., Kujawski A.: "Zbiór zadań z fizyki dla kandydatów na wyższe uczelnie", Wydawnictwa Naukowo-Techniczne. 2003	
	Supplementary literature	1. Cz. Bobrowski — Fizyka — krótki kurs, Wydawnictwa Naukowo-Techniczne, Warszawa 2005	
	eResources addresses	Fizyka I - Moodle ID: 18559 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=18559	
Example issues/ example questions/ tasks being completed	1. Kinematics: basic concepts and kinematic quantities, linear rectilinear motion; uniformly variable motion; relativity of movement. 2. Dynamics: principles of dynamics; inertial and non-inertial reference systems; dynamics of the translational movement; dynamics of rotary motion. 3. Principles of behavior in mechanics: work, energy and power; the principle of energy conservation; momentum; principle of conservation of momentum; moment of momentum; the principle of preserving momentum.		
Work placement	Not applicable		