



Subject card

Subject name and code	Physics, PG_00048910						
Field of study	Chemistry in Construction Engineering						
Date of commencement of studies	October 2022		Academic year of realisation of subject		2022/2023		
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		3.0		
Learning profile	general academic profile		Assessment form		assessment		
Conducting unit	Department of Theoretical Physics and Quantum Information -> Faculty of Applied Physics and Mathematics						
Name and surname of lecturer (lecturers)	Subject supervisor		dr inż. Ewa Erdmann				
	Teachers						
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	15.0	0.0	0.0	0.0	30
	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	30		5.0		40.0	75
Subject objectives	Introduction to the topics of classical mechanics						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	K6_W02		Knows fundamental physical structures and is able to solve concrete models		[SU1] Assessment of task fulfilment		
	K6_U02		Solving physics problems develops capabilities of individual work		[SU2] Assessment of ability to analyse information		

Subject contents	Vectors		
	Velocity and acceleration as time derivatives		
	Newton's laws		
	Momentum conservation		
	Examples of forces		
	Potential forces		
	Examples of potentials		
	Work as an integral		
	Harmonic oscillator		
	Integration of Newton equations for various forces		
	Kinetic energy		
	Energy conservation for potential forces		
	Angular momentum		
	Rotations		
	Angular momentum conservation		
Prerequisites and co-requisites	no requirements		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	exercises	60.0%	50.0%
	exam	60.0%	50.0%
Recommended reading	Basic literature	AK Wróblewski, JA Zakrzewski, Wstęp do fizyki, PWN, 1979	
	Supplementary literature	Berkeley course of physics	
	eResources addresses	Adresy na platformie eNauczanie:	
Example issues/ example questions/ tasks being completed	Solve equations of motion of a harmonic oscillator		
	Prove that total energy in constant gravitational field is time-independent		
	Prove angular momentum conservation in a central potential		
Work placement	Not applicable		