



Subject card

Subject name and code	Physics - elementary issues, PG_00039915						
Field of study	Management and Production Engineering, Management and Production Engineering						
Date of commencement of studies	October 2020	Academic year of realisation of subject			2020/2021		
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 Physics of Electronic Phenomena -> Faculty of Applied Physics and Mathematics						
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. Tomasz Wąsowicz					
	Teachers	dr inż. Ireneusz Linert dr hab. Tomasz Wąsowicz					
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 dla ZiIP ćwiczenia gr1 20/21 - Moodle ID: 10007 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=10007						
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	To review and improve understanding of physics from secondary school						
Learning outcomes	Course outcome	Subject outcome			Method of verification		
	K6_U02	Student can apply the knowledge to solve an engineering problems.			[SU4] Assessment of ability to use methods and tools [SU2] Assessment of ability to analyse information		
	K6_K03	Student solves different problems. Student thinks critically			[SK1] Assessment of group work skills [SK5] Assessment of ability to solve problems that arise in practice		
	K6_W01	Student knows and can apply mathematical models to understand physical phenomena.			[SW3] Assessment of knowledge contained in written work and projects [SW1] Assessment of factual knowledge		
Subject contents	EXERCISES: Motion: uniformly linear motion, resultant motion, uniformly variable motion, circular motion, two-dimension projections. Dynamics law: laws of dynamics, linear momentum, conservation of linear momentum, friction Work and energy: work, power, kinetic energy, potential energy, conservation of energy Harmonic motion: deflection, velocity, acceleration in harmonic motion, mathematical pendulum, damped harmonic motion Mechanic waves: properties of mechanical waves, types of mechanical waves, wave interference, standing wave, sound wave, sound wave formation Electric field: Coloumbs law, electric field strength, electrostatic induction, potential of electric field, electrical capacitance. Electric current: current strength, Ohm's law, Kirchhoff's law, current work current power, Magnetic field: Magnetic field created by current conductors with electrodynamic force, Lorentz's force, phenomenon of electromagnetic induction, Lenz's law, Geometrical optic.						
Prerequisites and co-requisites	High school level physics knowledge						
Assessment methods and criteria	Subject passing criteria	Passing threshold			Percentage of the final grade		
	Midterm colloquium	50.0%			100.0%		

Recommended reading	Basic literature	1. Czerwińska A., Sagnowska B., Fizyka dla szkół średnich, Wyd. "Zamiast korepetycji", 2000 2. Chyla K., Zbiór prostych zadań z fizyki, Wyd. "Zamiast korepetycji", 1998
	Supplementary literature	No requirements
	eResources addresses	FIZYKA dla ZiIP ćwiczenia gr1 20/21 - Moodle ID: 10007 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=10007
Example issues/ example questions/ tasks being completed	A horse is pulling a sledge of mass m with constant velocity acting with force F directed at an angle α to the horizontal. Find friction force and coefficient of friction.	
Work placement	Not applicable	