



Subject card

Subject name and code	Physics I, PG_00050089						
Field of study	Geodesy and Cartography						
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			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 mgr inż. Wojciech Korzeniewski					
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	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_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 of classical physics; understand physical laws and on their basis can analyze technical problems.			[SW1] Assessment of factual knowledge		
	[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 on them.			[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 analyse 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>Elektrostatics. Coulomb's and Gauss's laws.</p> <p>Electric current. Ohm's and Kirchhoff's laws.</p> <p>The magnetic fields. , Ampere's, Biot's - Savart's, Faraday's laws.</p> <p>Maxwell's equations.</p>											
Prerequisites and co-requisites	Course for students who completed mathematical and physics at the advanced level in the secondary school.											
Assessment methods and criteria	<table border="1"> <thead> <tr> <th data-bbox="448 860 794 898">Subject passing criteria</th> <th data-bbox="794 860 1141 898">Passing threshold</th> <th data-bbox="1141 860 1485 898">Percentage of the final grade</th> </tr> </thead> <tbody> <tr> <td data-bbox="448 898 794 927">test I</td> <td data-bbox="794 898 1141 927">50.0%</td> <td data-bbox="1141 898 1485 927">50.0%</td> </tr> <tr> <td data-bbox="448 927 794 965">test II</td> <td data-bbox="794 927 1141 965">50.0%</td> <td data-bbox="1141 927 1485 965">50.0%</td> </tr> </tbody> </table>			Subject passing criteria	Passing threshold	Percentage of the final grade	test I	50.0%	50.0%	test II	50.0%	50.0%
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test I	50.0%	50.0%										
test II	50.0%	50.0%										
Recommended reading	Basic literature	<p>e-book: UNIVERSITY PHYSICS (www.ftims.pg.edu.pl/Studenci/Materialy_dydaktyczne)</p> <p>Resnick, Halliday, Walker, FUNDAMENTALS OF PHYSICS, John Wiley&Sons, Inc.</p>										
	Supplementary literature	Orear, PHYSICS, Macmillan Publishing Co.										
	eResources addresses	<p>Adresy na platformie eNauczenie:</p> <p>FIZYKA I - GEODEZJA I KARTOGRAFIA_22/23 - Moodle ID: 23340 https://enauczenie.pg.edu.pl/moodle/course/view.php?id=23340</p>										
Example issues/ example questions/ tasks being completed	<p>Kinematic equations of motion in gravitational field.</p> <p>Bodies systems - forces.</p> <p>Elastic and inelastic collisions.</p> <p>Rotary movement. Rolling without skidding.</p> <p>Mathematical and physical pendulum.</p> <p>Electric field strength and potential.</p> <p>Movement of charge in an electric and magnetic field.</p>											
Work placement	Not applicable											