



Subject card

Subject name and code	Physics, PG_00044539						
Field of study	Transport						
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			6.0		
Learning profile	general academic profile	Assessment form			exam		
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. Robert Koziół dr hab. inż. Natalia Wójcik					
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	45.0	0.0	0.0	0.0	75
	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	75	5.0		70.0	150	
Subject objectives	Learning the basic laws of classical physics. Developing of ability to analyze physical phenomena and solving technical problems based on the physical laws.						
Learning outcomes	Course outcome	Subject outcome			Method of verification		
	[K6_W02] has basic knowledge of physics which includes technical mechanics, fluid mechanics, solid state physics, optics and acoustics required for understanding basic phenomena of physics which occur in transport	Student can recognize physical phenomena. Student can formulate, understand and use basic laws and principles.			[SW1] Assessment of factual knowledge		
	[K6_W03] has basic knowledge of hydromechanics, thermodynamics, machine design, materials science and electrical engineering required for understanding the principles of construction and operation of means of transport	Student knows fundamental problems of classical physics. Student understands physical laws and based on them can analyze technical problems.			[SW1] Assessment of factual knowledge		
	[K6_U06] able to plan and conduct simple laboratory and operational experiments and simulations in the area of transport; able to interpret the results and formulate conclusions	Student can analyze experimental results and knows how to formulate conclusions based of them.			[SU4] Assessment of ability to use methods and tools		

Subject contents	<p>Kinetics of progressive and rotational motion.</p> <p>Newton's principles. 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>Electrostatic. 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 and Faraday's laws.</p> <p>Maxwell's equations.</p>														
Prerequisites and co-requisites	Course for Students, who completed mathematics and physics at the advanced level in the secondary school.														
Assessment methods and criteria	<table border="1"> <thead> <tr> <th data-bbox="448 781 794 815">Subject passing criteria</th> <th data-bbox="794 781 1141 815">Passing threshold</th> <th data-bbox="1141 781 1485 815">Percentage of the final grade</th> </tr> </thead> <tbody> <tr> <td data-bbox="448 815 794 848">Test 1</td> <td data-bbox="794 815 1141 848">50.0%</td> <td data-bbox="1141 815 1485 848">30.0%</td> </tr> <tr> <td data-bbox="448 848 794 882">Exam</td> <td data-bbox="794 848 1141 882">50.0%</td> <td data-bbox="1141 848 1485 882">40.0%</td> </tr> <tr> <td data-bbox="448 882 794 920">Test 2</td> <td data-bbox="794 882 1141 920">50.0%</td> <td data-bbox="1141 882 1485 920">30.0%</td> </tr> </tbody> </table>			Subject passing criteria	Passing threshold	Percentage of the final grade	Test 1	50.0%	30.0%	Exam	50.0%	40.0%	Test 2	50.0%	30.0%
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Test 1	50.0%	30.0%													
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Recommended reading	<p>Basic literature</p> <p>Supplementary literature</p> <p>eResources addresses</p>	<p>e-book "University Physics" (www.ftims.pg.edu.pl/Studenci/Materialy_dydaktyczne)</p> <p>D.Halliday, R.Resnick, J.Walker, "Fundamentals of physics", Jon Wiley & Sons, 2001</p> <p>J.Orear, "Physics", Macmillan Publishing Co.</p>	<p>Adresy na platformie eNauczenie:</p> <p>FIZYKA I_TRANSPORT_22/23 - Moodle ID: 23339</p> <p>https://enauczenie.pg.edu.pl/moodle/course/view.php?id=23339</p>												
Example issues/ example questions/ tasks being completed	<p>Equations of motion in the gravitational field.</p> <p>Elastic and inelastic collisions.</p> <p>Moment of inertia of the rigid body.</p> <p>Mathematical and physical pendulum.</p> <p>Electric field strength and potential. Field superposition.</p> <p>Movement of charge in an electric and magnetic fields.</p> <p>Magnetic field around a current carrying conductor.</p>														
Work placement	Not applicable														