GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Physics, PG_00044539		
Field of study	Transport		
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	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. Iga Szpunar dr inż. Anna Rybicka	

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

Adresy na platformie eNauczanie:
FIZYKA I - TRANSPORT - Moodle ID: 6266
https://enauczanie.pg.edu.pl/moodle/course/view.php?id=6266

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

<table>
<tr><td>Subject contents</td><td>Kinetics of progressive and rotational motion.

Newton's principles.Dynamisc of progressive and rotational motion.

Work and energy. Principles of conservation of momentum and energy.

Harmonic and wave motion.

Electrostatic. Coulomb's and Gauss's laws,

Electric current. Ohm's and Kirchhoff's laws.

The magnetic fiels. Ampere's, Biot's - Savart's and Faraday's laws.

Maxwell's exuations.</td></tr>
<tr><td>Prerequisites and co-requisites</td><td>Course for Students, who completed mathematisc and physics at the advanced level in the secondary school.</td></tr>
<tr><td>Assessment methods and criteria</td><td><table>
<tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr>
<tr><td>Test 1</td><td>50.0%</td><td>30.0%</td></tr>
<tr><td>Exam</td><td>50.0%</td><td>40.0%</td></tr>
<tr><td>Test 2</td><td>50.0%</td><td>30.0%</td></tr>
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<tr><td>Recommended reading</td><td><table>
<tr><td>Basic literature</td><td>e-book "University Physics" (www.ftims.pg.edu.pl/Studenci/Materiały dydaktyczne)

D.Halliday, R.Resnick, J.Walker, "Fundamentals of physics", Jon Willey &Sons, 2001</td></tr>
<tr><td>Supplementary literature</td><td>J.Orear, "Physics", Macmillan Publishing Co.</td></tr>
<tr><td>eResources addresses</td><td>FIZYKA I - TRANSPORT - Moodle ID: 6266
https://enauczanie.pg.edu.pl/moodle/course/view.php?id=6266</td></tr>
</table></td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td>Equations of motion in the gravitational field.

Elastic and inelastic collisions.

Moment of inertia of the rigid body.

Mathematical and physucal pendulum.

Electric field strenght and potential. Field superposition.

Movement of charge in an electric and magnetic fields.

Magnetic field around a current carrying conductor.</td></tr>
<tr><td>Work placement</td><td>Not applicable</td></tr>
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