GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Physics, PG_00044538		
Field of study	Transport		
Date of commencement of studies	October 2023	Academic year of realisation of subject	2023/2024
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	2	ECTS credits	3.0
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	

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

Knowledge of basic principles of thermodynamics and modern physics.

Ability of analizing physical phenomena, solving of technical problems.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[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	Students can analize experimental results and formulate conclusions.	[SU2] Assessment of ability to analyse information [SU3] Assessment of ability to use knowledge gained from the subject
[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	Students identyfy basic physical phenomena, formulate and apply them.	[SW1] Assessment of factual knowledge
[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	Students know basic pfoblems of thermodynamisc, understand physical laws and analize technical problems.	[SW1] Assessment of factual knowledge

<table>
<tr><td>Subject contents</td><td>Fundamental laws of macroscopic thermodynamics.

Elements of special relativity theory.

Black body radiation.

Corpuscular and wave character of electromagnetic radiation.

Atom models.

Schroedinger equation.

Elements of solid state physics.

Radioactivity.</td></tr>
<tr><td>Prerequisites and co-requisites</td><td>Continuation of the physics course, given during the first semester (mechanics, electricity, magnetism)</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>Lecture - exam ih theory</td><td>50.0%</td><td>40.0%</td></tr><tr><td>Exercises -practical test</td><td>50.0%</td><td>60.0%</td></tr></table></td></tr>
<tr><td>Recommended reading</td><td><table><tr><td>Basic literature</td><td>Ohanian, Markert, Physics fot Engineers and Scientists, NY Norton, 2007

www.ftims.pg.edu.pl/Studenci/Materiały dydaktyczne (University Physics)</td></tr><tr><td>Supplementary literature</td><td>Tipler, Llellewyn, Modern Physics, 6ed, Freeman, 2012</td></tr><tr><td>eResources addresses</td><td>Adresy na platformie eNauczanie:
FIZYKA II - TRANSPORT_23/24 - Moodle ID: 36148
https://enauczanie.pg.edu.pl/moodle/course/view.php?id=36148</td></tr></table></td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td>First and second thermodynamics laws.

Lorentz transformations.

Photoelectric effect.

Postulates of Bohr model of atom.

Broglie theory.

Radioactive desintegration law.</td></tr>
<tr><td>Work placement</td><td>Not applicable</td></tr>
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