GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Physics I, PG_00059243		
Field of study	Civil Engineering		
Date of commencement of studies	October 2026	Academic year of realisation of subject	2026/2027
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	Division of Ceramics -> Institute of Nanotechnology and Materials Engineering -> Faculty of Applied Physics and Mathematics -> Faculties of Gdańsk University of Technology		
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Tadeusz Miruszewski	
	Teachers	mgr inż. Kinga Kujawska Błażej Woźny dr inż. Marcin Nowak dr inż. Tadeusz Miruszewski mgr inż. Joanna Pośpiech dr inż. Leszek Litzbarski dr inż. Aleksandra Kuryłowicz-Cudowska mgr inż. Klaudia Hapke dr inż. Erwin Wojtczak Tomasz Ciborowski dr inż. Michał Winiarski Stefania Wolff	

Lesson types	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						
	eNauczanie source address: https://enauczanie.pg.edu.pl/2025/course/view.php?id=4836						
	Moodle ID: 4836 Fizyka I (2026/2027) https://enauczanie.pg.edu.pl/2025/course/view.php?id=4836						

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	5.0	35.0	100

Subject objectives	Familiarizing the student with the basic phenomena and laws of physics. Acquisition by the student of the ability to explain phenomena, draw conclusions and solve problems

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K6_U01] Apply knowledge and understanding of mathematics as well as sciences and engineering disciplines underlying civil engineering to solve engineering problems and issues.	The student solves problems in physics and interprets the obtained results.	[SU4] Assessment of ability to use methods and tools [SU2] Assessment of ability to analyse information [SU1] Assessment of task fulfilment
[K6_W01] Demonstrate knowledge and understanding of mathematics as well as sciences and engineering disciplines underlying civil engineering at a level necessary to achieve the other programme outcomes.	The student defines the basic laws of physics. The student applies the acquired knowledge to describe the physical and environmental reality. The student applies the physical laws to identify, formulate and solve problems.	[SW1] Assessment of factual knowledge

Subject contents

Course content – lecture

Kinematics of a material point (rectilinear motion, motion on a plane); dynamics of a material point (Newton's laws, work and other forms of energy, conservative forces, conservation principles); rigid body mechanics, classical and engineer mechanics.

Course content – exercises

Kinematics of a material point (rectilinear motion, motion on a plane); dynamics of a material point (Newton's laws, work and other forms of energy, conservative forces, conservation principles); rigid body mechanics, classical and engineer mechanics.

Prerequisites and co-requisites

The course is dedicated to students who have completed an extended physics and mathematics course in a secondary school. Students who have not completed such a course should either participate in tutorials or increase the number of hours of self-work and participation in consultations.

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
assessment	60.0%	100.0%

Recommended reading

Basic literature	Physics for Colleges Volume 1 & 2; OpenStax PolandFundamentals of physics volume 1,2,3; Halliday D.; Resnick R.; Walker JHalliday D.'s workbook; Resnick R.; Walker J
Supplementary literature	Podstawy fizyki Herman M.A. ; Kalestyński, Widomski L Zbiór zadań z fizyki Jędrzejewski J., Kruczek W., Kujawski A. Zbiór zadań z fizyki Cedrik M.S.
eResources addresses	

Example issues/ example questions/ tasks being completed

Derive the formula for centripetal acceleration in circular motionProve Steiner's theoremDerive the relationship between the energy and the temperature of the gas

Practical activites within the subject

Not applicable

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