GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Physics, PG_00055759		
Field of study	Mechanical and Medical Engineering		
Date of commencement of studies	October 2021	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	3	Language of instruction	Polish
Semester of study	5	ECTS credits	6.0
Learning profile	general academic profile	Assessment form	exam
Conducting unit	Faculty of Ocean Engineering and Ship Technology		
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. inż. Małgorzata Śmiałek-Telega	
	Teachers	dr inż. Joanna Grochowalska dr hab. inż. Małgorzata Śmiałek-Telega	

Lesson types and methods of instruction

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	30.0	15.0	15.0	0.0	0.0	60

E-learning hours included: 0.0

Additional information:
N/A

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	15.0	75.0	150

Subject objectives

N/A

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K6_W02] he/she has physics skills in the field of classical mechanics, acoustics, optics, electricity, magnetism, quantum physics and medical physics		[SW1] Assessment of factual knowledge [SW2] Assessment of knowledge contained in presentation
[K6_U05] he/she is able to use analytic and modelling methods to formulate and solve engineering tasks related to the mechanical-medical area		[SU2] Assessment of ability to analyse information [SU3] Assessment of ability to use knowledge gained from the subject [SU4] Assessment of ability to use methods and tools
[K6_U01] he/she is able to acquire knowledge and self-studying, he/she is able to find needed information in specialist books, databases and other sources, he/she is able to integrate information and draw conclusions, he/she is able to communicate by using different technics in work and outside		[SU1] Assessment of task fulfilment [SU5] Assessment of ability to present the results of task

Subject contents	1. Mechanical waves 2. Thermodynamics and heat, 3. Kinetic theory of gases 4. Electric charge and electric field 5. Electric capacity, current and resistance 6. Magnetic field, induction and inductance 7. Electromagnetic waves 8. Optics; Interference and diffraction 9. Elements of condensed phase physics 10. Elements of physics and nuclear energy 11. project management 12. construction and testing of the test system 13. system programming elements 14. simple programmable systems
Prerequisites and co-requisites	Fundamentals of differential calculus and geometry. Fundamentals of classical mechanics. Basic skills in programming
Assessment methods and criteria	

Subject passing criteria	Passing threshold	Percentage of the final grade
Lecture	50.0%	50.0%
Laboratory	50.0%	50.0%

Recommended reading	Basic literature	David Halliday, Robert Resnick, Jearl Walker, Podstawy fizyki. T. 1-5, Wydawnictwo Naukowe PWN, 2012 J. Orear, Fizyka, tom 1 i 2, Warszawa 1998 A. Januszajtis, Fizyka dla Politechnik, tom 1-3, Warszawa 1991 J. Massalski, M. Massalska, Fizyka dla Inżynierów, tom 1 i 2, Warszawa 2013
	Supplementary literature	Paul A. Tipler, Ralph A. Llewellyn, Fizyka współczesna, Wydawnictwo Naukowe PWN, Warszawa 2012; I.W. Sawieliew, Wykłady z fizyki, tom 1. i 2., Wydawnictwa Naukowe PWN, Warszawa, 2003
	eResources addresses	Adresy na platformie eNauczanie: PG_00055759 UMIiB Fizyka 23/24 - Moodle ID: 33432 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=33432
Example issues/ example questions/ tasks being completed	1. EM wave polarity (linear and unpolarized polarized wave, Malus' law) 2. Law of refraction (pattern with description and drawing) 3. Concave spherical concave mirrors (drawing, diagram of radii, which we get images depending on the placement of the object relative to the mirror) 4 Diffusing lens (drawing, diagram of rays, which we get images depending on the placement of the object in relation to the lens) 5. Constructive event (in which situation it takes place, drawing with description) 6. Young's experiment on two slits (drawing with description, when there are bright colors) when dark stripes, pattern)	
Work placement	Not applicable	

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