



## Subject card

Subject name and code	Physics, PG_00055900						
Field of study	Power Engineering, Power Engineering, Power 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		2.0		
Learning profile	general academic profile		Assessment form		assessment		
Conducting unit	Zakład Energetyki i Automatyki Morskiej -> Institute of Ocean Engineering and Ship Technology -> Faculty of Mechanical Engineering and Ship Technology						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. inż. Małgorzata Śmiatek-Telega				
	Teachers		dr hab. inż. Małgorzata Śmiatek-Telega				
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	0.0	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		2.0		18.0	50
Subject objectives	Acquisition of basic knowledge in selected branches of physics, both classical and modern. Acquiring the skills of qualitative understanding of selected principles and laws of classical physics and modern and quantitative analysis of selected phenomena in this area						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K6_U01] can obtain information from literature and other sources, organize, interpret it and draw and formulate conclusions; has the ability to self-educate, interprets the results of completed engineering tasks, is able to design simple energy systems and their systems		The student understands the basic issues of modern physics		[SU2] Assessment of ability to analyse information		
	[K6_W02] has a basic knowledge of physics (including optics, electricity and magnetism), chemistry, technical thermodynamics, fluid mechanics and general mechanics needed to understand and describe the basic phenomena occurring in devices and systems, energy plants and transmission networks and their environment		Students understand the principle of operation of semiconductor elements and their application in electronics, understand the principle of operation of nuclear electrons.		[SW1] Assessment of factual knowledge		
Subject contents	elements of cs band theory, theory of semiconductors and their application, elements of nuclear physics						
Prerequisites and co-requisites	Fundamentals of physics: mechanics and heat, electricity and magnetism, hydromechanics						
Assessment methods and criteria	Subject passing criteria		Passing threshold		Percentage of the final grade		
	Lecture		50.0%		100.0%		
Recommended reading	Basic literature		<a href="#">David Halliday</a> , <a href="#">Robert Resnick</a> , <a href="#">Jearl Walker</a> <i>Fundamentals of Physics</i> , Wiley, any edition				
	Supplementary literature		J. Massalski, M. Massalska, Fizyka dla Inżynierów, tom 1 i 2, Warszawa 2013				

	eResources addresses	Adresy na platformie eNauczenie: PG_00055087 Energetyka FIZYKA - Moodle ID: 17772 <a href="https://enauczenie.pg.edu.pl/moodle/course/view.php?id=17772">https://enauczenie.pg.edu.pl/moodle/course/view.php?id=17772</a>
Example issues/ example questions/ tasks being completed	<ol style="list-style-type: none"> <li>1. Give the properties of semiconductors, metals and dielectrics</li> <li>2. What features does laser light have?</li> <li>3. What is the difference between e-m waves and mechanical waves?</li> <li>4. Principle of operation of a nuclear power plant</li> </ol>	
Work placement	Not applicable	