



Subject card

Subject name and code		Physics III, PG_00039785						
Field of study		Materials Engineering, Materials Engineering, Materials Engineering						
Date of commencement of studies		October 2021	Academic year of realisation of subject			2022/2023		
Education level		first-cycle studies	Subject group			Obligatory subject group in the field of study Subject group related to scientific research in the field of study		
Mode of study		Full-time studies	Mode of delivery			at the university		
Year of study		2	Language of instruction			Polish		
Semester of study		3	ECTS credits			6.0		
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						
Name and surname of lecturer (lecturers)		Subject supervisor		dr inż. Tadeusz Miruszewski				
		Teachers		dr inż. Marek Augustyniak dr inż. Tadeusz Miruszewski dr inż. Kamil Kolincio				
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						
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	10.0		80.0		150
Subject objectives		Acquiring knowledge in the field of electricity and magnetism, atomic and nuclear physics						
Learning outcomes		Course outcome	Subject outcome			Method of verification		
		K6_U01	Student is able to perform basic measurements in the field of electricity and magnetism, and atomic physics.			[SU2] Assessment of ability to analyse information [SU3] Assessment of ability to use knowledge gained from the subject		
		K6_K01	The student is able to determine the basic problems of electricity and magnetism. is aware of the limitations of his knowledge of modern physics. Can understand the need for further education			[SK2] Assessment of progress of work		
		K6_U05	The student is able to use various sources of knowledge and learn independently			[SU2] Assessment of ability to analyse information [SU4] Assessment of ability to use methods and tools		
		K6_W02	Student uses commonly used mathematical notation in physical calculations, solves physical problems. Is able to explain the basic concepts of modern physics			[SW1] Assessment of factual knowledge [SW2] Assessment of knowledge contained in presentation [SW3] Assessment of knowledge contained in written work and projects		

Subject contents	- electric field issues- magnetic phenomena- corpuscular wave duality- atomic physics- Nuclear physics- basics of quantum mechanics		
Prerequisites and co-requisites	knowledge of physics from the previous semester		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	laboratory	50.0%	20.0%
	accounting classes	50.0%	40.0%
	exam	50.0%	40.0%
Recommended reading	Basic literature	M.A. Herman A. Kalestyński, L. Widomski "Podstawy fizyki dla kandydatów na wyższe uczelnie i studentów" PWN J. Massalski "Fizyka dla inżynierów" NT D. Halliday, R. Resnick, J. Walker Podstawy fizyki,PWN	
	Supplementary literature	R.Eisberg, R. Resnick, Fizyka kwantowa, PWN A.A. Czerwiński Energia jądrowa i promieniotwórczość, OE V. Acosta, C.L. Cowan, B.J. Graham, Podstawy fizyki współczesnej	
	eResources addresses	Podstawowe https://enauczanie.pg.edu.pl/moodle/course/view.php?id=26279 - Adresy na platformie eNauczanie: Fizyka III _ ćwiczenia rachunkowe - Moodle ID: 26278 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=26278	
Example issues/ example questions/ tasks being completed	- based on the Bohr atom model, determine the energy of energy levels - describe the photoelectric phenomenon- explain the principle of operation of the nuclear reactor		
Work placement	Not applicable		

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