

## GDAŃSK UNIVERSITY OF TECHNOLOGY

## Subject card

Subject name and code	Physics II, PG_00049143								
Field of study	Civil Engineering								
Date of commencement of studies	October 2021		Academic year of realisation of subject			2021/2022			
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			exam			
Conducting unit	Department of Solid State Physics -> Faculty of Applied Physics and Mathematics								
Name and surname	Subject supervisor dr inż. Bogumiła Strzelecka, doc. PG								
of lecturer (lecturers)	Teachers		mgr inż. Wojciech Korzeniewski dr inż. Bartosz Trawiński dr inż. Karolina Górnicka						
		dr inż. Bogumiła Strzelecka, doc. PG							
Lesson types and methods	Lesson type	Lecture	Tutorial	Laboratory	Projec	t	Seminar	SUM	
of instruction	Number of study hours	15.0	15.0	0.0	0.0		0.0	30	
	E-learning hours included: 0.0								
	Adresy na platformie eNauczanie:								
Learning activity and number of study hours	Learning activity	Participation in classes includ plan	n didactic led in study	Participation in consultation hours		Self-study		SUM	
	Number of study hours	30		5.0		40.0		75	
Subject objectives	To acquaint the student with the laws of electromagnetism and the physical aspect of electromagnetic waves. To acquaint the student with elements of modern, atomic and nuclear physics.								
Learning outcomes	Course outcome		Subject outcome			Method of verification			
	[K6_W01] has knowledge of selected branches of mathematics, physics and chemistry, which is a base of construction subjects, such as construction theory and material technology and id needed to formulate and solve typical problems of civil engineering		A student who has completed the course has the basic knowledge of the material presented in the lecture and is able to think and act in a creative way.			[SW1] Assessment of factual knowledge			
	[K6_U02] is able to define basic calculation models used in computer calculations		The student is able to use the terminology related to physics, solve accounting tasks and interpret the results obtained.			[SU1] Assessment of task fulfilment [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			
Subject contents	Amper's law, Biot-Savart law, magnetic materials, Faraday's law, Maxwell's laws, electromagnetic waves with particular emphasis on optics, Einstein's theories, thermal radiation, photoelectric effect, X radiation, elements of atomic and nuclear physics.								
Prerequisites and co-requisites									
Assessment methods and criteria	Subject passing criteria		Passing threshold			Percentage of the final grade			
	auditorium exercises		51.0%			50.0%			
	exam		51.0%			50.0%			

Recommended reading	Basic literature	<ol> <li>Halliday D. Resnick R. Walker J. Fundamentals of Physics</li> <li>Herman M.A., Kalestyński A, Widomski L Fundamentals of Physics</li> <li>Acosta V. Cowan C.L., Grahsm B.J. Fundamentals of Modern Physics</li> <li>Irodov I.E. A set of tasks in atomic and nuclear physics</li> </ol>				
	Supplementary literature	<ol> <li>Massalski J., Massalska M. Physics for engineers</li> <li>Skorko M. Physics</li> </ol>				
	eResources addresses					
Example issues/ example questions/ tasks being completed	<ol> <li>Which radiation in the electromagnetic spectrum will have the highest energy?</li> <li>Give and justify an example of tunneling a particle through a potential barrier.</li> <li>Define the half-life time and derive the formula.</li> </ol>					
Work placement	Not applicable					