



## Subject card

Subject name and code	Physics II, PG_00040165						
Field of study	Mechanical Engineering						
Date of commencement of studies	October 2023	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	1	Language of instruction			English		
Semester of study	2	ECTS credits			1.0		
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	15.0	0.0	0.0	0.0	0.0	15
	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	15		3.0		7.0	25
Subject objectives	Student knows the basics of electricity and magnetism; student is familiar with the concept of electromagnetic waves						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	K6_W02		The student has knowledge of modern physics.		[SW1] Assessment of factual knowledge		
	K6_U01		The student can solve a physical problem on the basis of data taken from sources.		[SU1] Assessment of task fulfilment		
Subject contents	Electricity: Electric charge and electric field, Gauss' law, electric field potential, capacitance; current and resistance. Magnetic field, magnetic induction; magnetic field from current-carrying wires. Electromagnetic waves: propagation of waves, Poyntings vector, spectrum of electromagnetic waves.						
Prerequisites and co-requisites	Course credit Physics I						
Assessment methods and criteria	Subject passing criteria		Passing threshold		Percentage of the final grade		
	final test		50.0%		100.0%		
Recommended reading	Basic literature		Halliday & Resnick FUNDAMENTALS OF PHYSICS by J EAR L WALKER, 10th edition (extended), Wiley, 2014				
	Supplementary literature		University Physics Volume1, 2 and 3  <a href="https://openstax.org/details/books/university-physics-volume-1">https://openstax.org/details/books/university-physics-volume-1</a>  <a href="https://openstax.org/details/books/university-physics-volume-2">https://openstax.org/details/books/university-physics-volume-2</a>  <a href="https://openstax.org/details/books/university-physics-volume-3">https://openstax.org/details/books/university-physics-volume-3</a>				
	eResources addresses		Adresy na platformie eNauczanie: PG_00040165_PHYSICS II - DaPE- 2023/24 - Moodle ID: 38147 <a href="https://enauczanie.pg.edu.pl/moodle/course/view.php?id=38147">https://enauczanie.pg.edu.pl/moodle/course/view.php?id=38147</a>				

Example issues/ example questions/ tasks being completed	<p>Let <math>k</math> denote <math>1/4\epsilon_0</math>. What is the magnitude of the electric field at a distance <math>r</math> from an isolated point charge <math>q</math>?</p> <p>A point charge is placed at the center of a spherical Gaussian surface. When is the electric flux <math>\Phi_E</math> changed?</p> <p>A hydrogen atom that has lost its electron is moving east in a region where the magnetic field is directed from south to north. Which direction will it be deflected?</p>
Work placement	Not applicable