GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Physics II, PG_00040165		
Field of study	Mechanical Engineering		
Date of commencement of studies	October 2026	Academic year of realisation of subject	2026/2027
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	Division of Automation and Marine Energy -> Institute of Naval Architecture -> Faculty of Mechanical Engineering and Ship Technology -> Faculties of Gdańsk University of Technology		
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. inż. Małgorzata Śmiałek-Telega	
	Teachers		

Lesson types

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 od electricity and magnetism; student is familiar with the concept of electromagnetic waves

Learning outcomes

Course outcome	Subject outcome	Method of verification
K6_U01	The student can solve a physical problem on the basis of data taken from sources.	[SU1] Assessment of task fulfilment
K6_W02	The student has knowledge of modern physics.	[SW1] Assessment of factual knowledge

Subject contents

Course content – lecture
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 https://openstax.org/details/books/university-physics-volume-1 https://openstax.org/details/books/university-physics-volume-2 https://openstax.org/details/books/university-physics-volume-3
eResources addresses	

Example issues/ example questions/ tasks being completed	Let k denote $1/4_0$. What is the magnitude of the electric field at a distance r from an isolated point charge q? A point charge is placed at the center of a spherical Gaussian surface. When is the electric flux $_E$ changed? 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 directed?
Practical activites within the subject	Not applicable

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