University of Gdańsk

Subject card

Subject name and code	Mathematics in Physics, PG_00210433		
Field of study	Nuclear safety and radiological protection		
Date of commencement of studies	October 2026	Academic year of realisation of subject	2026/2027
Education level	Bachelor's studies	Subject group	Optional subject group
Mode of study	full-time studies	Mode of delivery	at the university
Year of study	1	Language of instruction	Polish Polish
Semester of study	2	ECTS credits	3.0
Learning profile	academic	Assessment form	credit
Conducting unit			
Name and surname of lecturer (lecturers)	Subject supervisor	dr Joanna Gondek	
	Teachers		

Lesson types

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	0.0	30.0	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	0.0	45.0	75

Subject objectives

to consolidate and deepen students' understanding of the mathematical concepts covered in the Mathematics course (first semester). Mathematical concepts will be discussed in terms of their applications in physics, and physical equations will be discussed as examples of mathematical concepts.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[BJORL3_U01] Can formulate the laws of physics and chemistry using mathematical formalism.	Students are able to consciously apply appropriate mathematical concepts in describing physical phenomena (mechanical, electromagnetic, and nuclear), solve mathematical problems and quantitative exercises in physics, and interpret the results obtained.	[SU1] oral statement/conversation/ discussion [SU3] text preparation/written work
[BJORL3_W04] Has an advanced knowledge and understanding of selected techniques in advanced mathematics to the extent necessary to describe phenomena at the subatomic level and to solve problems in nuclear physics and chemistry.	The student is familiar with and understands the concepts of differential and integral calculus in the context of their application to the description of mechanical, electromagnetic and nuclear phenomena. They understand the role and significance of mathematics in the development of physics and science in general.	[SW1] oral statement/ conversation/discussion [SW3] text preparation/written work
[BJORL3_W02] Has an advanced understanding of the role of physical and chemical experiments, mathematical theoretical models approximating reality, and computer simulations in scientific research methodology; is aware of technological, apparatus, and methodological limitations in scientific research.	The student is familiar with and understands the principles underlying physical phenomena in the fields of mechanics, electromagnetism and nuclear physics, as well as the theories and mathematical models used to describe them.	[SW1] oral statement/ conversation/discussion [SW3] text preparation/written work

Subject contents

Differential, integral, and matrix calculus in the complex number field, as applied to problems in mechanics, electromagnetism, and nuclear physics.

Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
		0.0%	5.0%
		51.0%	95.0%
Recommended reading	Basic literature	not applicable	
	Supplementary literature	not applicable	
	eResources addresses		
Example issues/ example questions/ tasks being completed	not applicable		
Work placement	Not applicable		

Document generated electronically. Does not require a seal or signature.