

Subject card

Subject name and code	Specialist laboratory, PG_00158301						
Field of study	Physics						
Date of commencement of studies	October 2024		Academic year of realisation of subject		2025/2026		
Education level	Bachelor's studies		Subject group		Obligatory subject group in the field of study Optional subject group		
Mode of study	full-time studies		Mode of delivery		at the university		
Year of study	2		Language of instruction		Polish not applicable		
Semester of study	4		ECTS credits		4.0		
Learning profile	academic		Assessment form		credit		
Conducting unit	Faculty of Mathematics, Physics and Informatics -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		dr Dzmitryi Ushakou				
	Teachers		dr Dzmitryi Ushakou dr Michał Mońka dr Justyna Barzowska dr Paweł Rochowski mgr Mikołaj Kamiński				
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	0.0	60.0	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		0.0		60.0	120
Subject objectives	not applicable						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[FIZL3_K08] is able to speak competently on basic problems of physics and its applications	not applicable	[SK5] implementation of a problem task
	[FIZL3_W01] has advanced knowledge of physical concepts, principles and theories, understands their historical development and significance not only for physics, but also for other exact and natural sciences and cognition of the world	not applicable	[SW5] implementation of a problem task
	[FIZL3_W03] knows how to plan and perform a simple physical experiment and analyze the results obtained; knows the elements of the theory of measurement uncertainty as applied to physical experiments, knows the basic units of the SI system and its most important derived units; knows other systems of measurement units	not applicable	[SW5] implementation of a problem task
	[FIZL3_K06] is aware of professionalism and adherence to professional ethics	not applicable	[SK5] implementation of a problem task
	[FIZL3_K07] has a sense of responsibility for jointly implemented tasks; is able to interact and work in a group, assuming different roles in it	not applicable	[SK5] implementation of a problem task
	[FIZL3_W10] has knowledge about the elementary components of matter and the types of fundamental interactions between them, about the manifestations of these interactions in phenomena occurring at various scales from subatomic to astronomic, knows the time and energy scales associated with these phenomena	non aplicable	[SW5] implementation of a problem task
	[FIZL3_K04] understands and appreciates the importance of legal aspects of conducting research and intellectual honesty	not applicable	[SK5] implementation of a problem task
	[FIZL3_W08] has knowledge of the basic phenomena and laws of geometric optics, wave optics and photometry	not applicable	[SW5] implementation of a problem task
	[FIZL3_W13] knows basic measuring instruments, their construction and principle of operation, and applications of simple electronic circuits	not applicable	[SW5] implementation of a problem task
	[FIZL3_W14] knows the basic principles of ergonomics and occupational health and safety	not applicable	[SW5] implementation of a problem task
	[FIZL3_W15] has a basic knowledge of the legal and ethical considerations involved in scientific and teaching activities	not applicable	[SW5] implementation of a problem task
	[FIZL3_W16] knows and understands the basic concepts and principles of industrial property protection and copyright law, and the principles of using patent information resources	not applicable	[SW5] implementation of a problem task
	[FIZL3_U01] can formulate basic physical laws using mathematical formalism	not applicable	[SU5] implementation of a problem task

	Course outcome	Subject outcome	Method of verification
	[FIZL3_U02] has the ability to perform measurements of basic physical quantities; can develop, describe and present the results of simple physical experiments and computer simulations; can perform quantitative analyses and formulate qualitative conclusions on this basis; can estimate measurement uncertainties	not applicable	[SU5] implementation of a problem task
	[FIZL3_U07] has the ability to quantitatively analyze vibrational and wave motion and describe optical and acoustic phenomena and the interaction of light with matter	not applicable	[SU5] implementation of a problem task
	[FIZL3_U08] can use mathematical apparatus and numerical methods to describe and model physical phenomena and processes	not applicable	[SU5] implementation of a problem task
	[FIZL3_U10] can independently search for information in Polish and English-language professional and popular science literature, as well as on the Internet	not applicable	[SU5] implementation of a problem task
	[FIZL3_U15] is able to work in a team, plan and organize his own work and that of the team	not applicable	[SU5] implementation of a problem task
	[FIZL3_K03] is aware of and understands the social aspects of the practical application of acquired knowledge and skills and the associated responsibility	not applicable	[SK5] implementation of a problem task
	[FIZL3_K02] can precisely formulate problems to deepen understanding of a given topic	not applicable	[SK5] implementation of a problem task
	[FIZL3_W02] understands the role of physical experiments, mathematical theoretical models approximating reality and computer simulations in the methodology of scientific research; is aware of technological, equipment and methodological limitations in scientific research	not applicable	[SW5] implementation of a problem task
[FIZL3_K01] knows the limitations of his own knowledge and understands the need for further education	not applicable	[SK5] implementation of a problem task	
Subject contents	not applicable		
Prerequisites and co-requisites	not applicable		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	not applicable	51.0%	100.0%
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		

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