

Subject card

Subject name and code	Graduate Seminar, PG_00154281						
Field of study	Physics						
Date of commencement of studies	October 2024		Academic year of realisation of subject		2025/2026		
Education level	Master'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		2.0		
Learning profile	academic		Assessment form		credit		
Conducting unit	Faculty of Mathematics, Physics and Informatics -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. Marek Józefowicz				
	Teachers		dr hab. Marek Józefowicz prof. dr hab. Stanisław Pogorzelski prof. dr hab. Piotr Bojarski				
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	0.0	0.0	0.0	30.0	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		30.0	60
Subject objectives	not applicable						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[FIZMU2_W06] has knowledge of current developments in physics, especially within his chosen specialty	not applicable	[SW1] oral statement/ conversation/discussion [SW3] text preparation/written work
	[FIZMU2_K08] is able to formulate competent opinions on professional issues and opinions on some issues that occupy public opinion, such as the greenhouse effect, renewable energy or nuclear energy	not applicable	[SK1] oral statement/conversation/ discussion [SK3] text preparation/written work [SK8] observation of student's independent or team work
	[FIZMU2_U04] is able to find the necessary information in the literature, both in databases and other sources; is able to reproduce the reasoning or course of an experiment described in the literature, taking into account the assumptions and approximations made	not applicable	[SU1] oral statement/conversation/ discussion [SU3] text preparation/written work [SU8] observation of student's independent or team work
	[FIZMU2_U05] has the ability to synthesize methods and ideas from different areas of physics and other sciences; is able to see that even distant phenomena are described by similar models	not applicable	[SU1] oral statement/conversation/ discussion [SU3] text preparation/written work [SU8] observation of student's independent or team work
	[FIZMU2_U06] is able to adapt knowledge and methodology of physics as well as applied experimental and theoretical methods to related scientific disciplines	not applicable	[SU1] oral statement/conversation/ discussion [SU3] text preparation/written work [SU8] observation of student's independent or team work
	[FIZMU2_U11] is able to determine the directions of further improvement of knowledge and skills (including self-education) in the chosen specialty and beyond it	not applicable	[SU1] oral statement/conversation/ discussion [SU3] text preparation/written work [SU8] observation of student's independent or team work
	[FIZMU2_K02] is aware of the conclusive role of experiment in the verification of physical theories; is aware of the scientific method in the accumulation of knowledge	not applicable	[SK1] oral statement/conversation/ discussion [SK3] text preparation/written work [SK8] observation of student's independent or team work
	[FIZMU2_K05] understands the need to popularize knowledge of physics including the latest scientific and technological developments	not applicable	[SK1] oral statement/conversation/ discussion [SK3] text preparation/written work [SK8] observation of student's independent or team work
	[FIZMU2_K07] is aware of the responsibility for jointly (team) carrying out research tasks	not applicable	[SK1] oral statement/conversation/ discussion [SK3] text preparation/written work [SK8] observation of student's independent or team work
	[FIZMU2_U08] is able to communicate effectively with both specialists and non-specialists in the field of problems specific to the area of physics studied	not applicable	[SU1] oral statement/conversation/ discussion [SU3] text preparation/written work [SU8] observation of student's independent or team work
	[FIZMU2_U01] is able to apply the scientific method in solving physical problems, performing experiments and making inferences	not applicable	[SU1] oral statement/conversation/ discussion [SU3] text preparation/written work [SU8] observation of student's independent or team work
	[FIZMU2_U07] is able to present the results of research (experimental, theoretical or numerical) in written, oral, multimedia presentation or poster form	not applicable	[SU1] oral statement/conversation/ discussion [SU3] text preparation/written work [SU8] observation of student's independent or team work
	[FIZMU2_K03] is able to work individually and in a team; is aware of the responsibility for jointly implemented tasks	not applicable	[SK1] oral statement/conversation/ discussion [SK3] text preparation/written work [SK8] observation of student's independent or team work

	Course outcome	Subject outcome	Method of verification
	[FIZMU2_U12] is able to use English in the field of physics, mathematics and computer science, in accordance with the requirements specified for level B2+ of the Common European Framework of Reference for Languages, to a degree that allows him/her to independently supplement his/her education and communicate with specialists in the same or related specialization	not applicable	[SU1] oral statement/conversation/discussion [SU3] text preparation/written work [SU8] observation of student's independent or team work
	[FIZMU2_U10] is able to popularize science within his specialty or related areas of physics	not applicable	[SU1] oral statement/conversation/discussion [SU3] text preparation/written work [SU8] observation of student's independent or team work
	[FIZMU2_U09] can work independently and in a team	not applicable	[SU1] oral statement/conversation/discussion [SU3] text preparation/written work [SU8] observation of student's independent or team work
	[FIZMU2_U03] is able to make a critical analysis of the results of measurements, observations or theoretical calculations, together with an assessment of the accuracy of the results	not applicable	[SU1] oral statement/conversation/discussion [SU3] text preparation/written work [SU8] observation of student's independent or team work
	[FIZMU2_W01] has an extended knowledge of general physics and an advanced knowledge of a selected area of physics; knows the history of the development of physics and its importance for the progress of science and natural sciences, world cognition and social development	not applicable	[SW1] oral statement/conversation/discussion [SW3] text preparation/written work
	[FIZMU2_K01] knows the limits of his own knowledge and skills; can formulate questions precisely; understands the need for further education of himself and others	not applicable	[SK1] oral statement/conversation/discussion [SK3] text preparation/written work [SK8] observation of student's independent or team work
	[FIZMU2_K06] is aware of the risks in obtaining information from unverified sources, including the Internet	not applicable	[SK1] oral statement/conversation/discussion [SK3] text preparation/written work [SK8] observation of student's independent or team work
	[FIZMU2_K04] understands and appreciates the importance of intellectual honesty in one's own and others' actions; is aware of ethical issues in the context of research integrity	not applicable	[SK1] oral statement/conversation/discussion [SK3] text preparation/written work [SK8] observation of student's independent or team work
[FIZMU2_W08] has a basic knowledge of the legal and ethical considerations involved in scientific and teaching activities	not applicable	[SW1] oral statement/conversation/discussion [SW3] text preparation/written work	
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%	80.0%
	not applicable	0.0%	20.0%
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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