

Subject card

Subject name and code	Nuclear Physics, PG_00182655						
Field of study	Physics						
Date of commencement of studies	October 2025		Academic year of realisation of subject		2027/2028		
Education level	Bachelor's studies		Subject group		Obligatory subject group in the field of study Optional subject group Subject group related to scientific research in the field of study		
Mode of study	full-time studies		Mode of delivery		at the university		
Year of study	3		Language of instruction		Polish		
Semester of study	6		ECTS credits		6.0		
Learning profile	academic		Assessment form		exam		
Conducting unit	Faculty of Mathematics, Physics and Informatics -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		dr inż. Angelina Łobejko				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	15.0	30.0	0.0	0.0	75
	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	75		0.0		75.0	150
Subject objectives	To familiarise students with the structure and properties of atomic nuclei, the nature of strong interactions, and experimental techniques in nuclear physics and its applications.						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[FIZL3_W10] has advanced knowledge of the elementary components of matter and the types of fundamental interactions between them, of the manifestations of these interactions in phenomena occurring on various scales from subatomic to astronomical, knows the time and energy scales associated with these phenomena	The student has advanced knowledge of the properties and components of atomic nuclei and understands how fundamental interactions determine their stability. The student is familiar with radioactive decay and nuclear reactions. They are able to relate phenomena occurring on a subatomic scale to processes observed in the laboratory and in nature, and understand the energy and time differences characteristic of various nuclear processes – from fast nuclear reactions to long-term transformations of radioactive isotopes. The student understands that nuclear processes have consequences on various scales – from the subatomic structure of matter, through terrestrial and biological phenomena, to astrophysical processes occurring inside stars and the evolution of the Universe.	[SW4] test/exam - oral or written [SW2] presentation/project/paper/report [SW3] text preparation/written work
	[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	The student has advanced knowledge of the concepts, principles and theories of nuclear physics, such as the structure of atomic nuclei, radioactive decay processes, reactions and nuclear models, as well as the interaction of radiation with matter and methods of its detection. They understand the historical development of these concepts, from discoveries in classical physics to contemporary nuclear models, and their significance not only for physics, but also for other exact and natural sciences, as well as for understanding the world around us.	[SW4] test/exam - oral or written [SW2] presentation/project/paper/report [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
	colloquium	51.0%	20.0%
	exam	51.0%	50.0%
	report	51.0%	30.0%
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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