



## Subject card

Subject name and code	Nuclear Physics Laboratory, PG_00053505						
Field of study	Biomedical Engineering						
Date of commencement of studies	October 2023		Academic year of realisation of subject		2025/2026		
Education level	first-cycle studies		Subject group		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		3.0		
Learning profile	general academic profile		Assessment form		assessment		
Conducting unit	Institute of Physics and Applied Computer Science -> Faculty of Applied Physics and Mathematics						
Name and surname of lecturer (lecturers)	Subject supervisor		dr Brygida Mielewska				
	Teachers						
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	0.0	30.0	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		4.0		41.0	75
Subject objectives	To show experimental aspects of atomic and nuclear physics						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K6_U05] can plan and conduct experiments related to the field of study, including computer simulations and measurements; interpret obtained results and draw conclusions		The student gains the ability to conduct experiments with the use of radioactive isotopes. Can correctly present measurement data and assess measurement uncertainties. Can correctly interpret the results and draw conclusions.		[SU1] Assessment of task fulfilment		
	[K6_U02] can perform tasks related to the field of study in an innovative way as well as solve complex and nontypical problems, applying knowledge of physics, in changing and not fully predictable conditions		Student obtains knowledge of the physics course, especially nuclear physics. The student acquires the ability to analyze the phenomena occurring with the participation of ionizing radiation. The student is able to use simple physical models in relation to more complex systems.		[SU1] Assessment of task fulfilment		
Subject contents	Investigation of stochastic processes with the use of spark-discharge detector. Measurement of the range of alpha particles in air with the use of ionizing chamber. Investigation of sample activation in neutron beam Measurement of half-time of radioactive decay in cascade processes. Measurement of absorption coefficient for gamma radiation in selected materials						
Prerequisites and co-requisites	Physics - elementary course Physics of atomic nucleus and particles (08837)						
Assessment methods and criteria	Subject passing criteria		Passing threshold		Percentage of the final grade		
	All exercises from schedule positively marked		60.0%		50.0%		
	Acceptance of all reports		60.0%		50.0%		
Recommended reading	Basic literature		1. Instrukcje do przedmiotu opracowane w formie edukacji na odległość, dostęp: <a href="http://enauczenie.pg.gda.pl/moodle">http://enauczenie.pg.gda.pl/moodle</a> . II Pracownia Fizyczna, M. Zubek, A. Kuczkowski, skrypt -Wydawnictwo PG				
	Supplementary literature		No requirements				
	eResources addresses		Adresy na platformie eNauczenie:				

Example issues/ example questions/ tasks being completed	Radioactive decay. Law of absorption of ionizing radiation.
Work placement	Not applicable

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