

Subject card

Subject name and code	, PG_00145245						
Field of study	Nuclear safety and radiological protection						
Date of commencement of studies	October 2024		Academic year of realisation of subject		2026/2027		
Education level	Bachelor's studies		Subject group		Obligatory subject group 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 not applicable		
Semester of study	6		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 inż. Angelina Łobejko				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	0.0	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		30.0	60
Subject objectives	The aim of the course is to familiarize students with the physical principles, construction, and applications of detectors used to detect ionizing radiation.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[BJORL3_W01] has a general knowledge of the basic concepts and principles of nuclear physics and chemistry, understands their historical development and their importance not only for nuclear safety and radiation protection, but also for understanding the modern world; has a basic knowledge of biology and ecology		The student understands the physical principles of ionizing radiation detection, as well as the operating principles of basic types of detectors and their properties. They are able to explain concepts related to basic measurement systems (including electronic and data acquisition systems) and understand the relation between the properties of radiation and the selection of appropriate measurement methods used in nuclear physics, radiation protection, and nuclear safety.		[SW4] test/exam - oral or written		
Subject contents	Classification of types of ionizing radiation. Mechanisms of interaction between ionizing radiation and matter. Conversion of radiation energy into an electrical signal. General detector parameters. Gas detectors. Scintillation detectors. Semiconductor detectors. Neutron detectors. Measurement electronics, signal analysis, and data acquisition systems. Applications of detection methods in nuclear physics, nuclear safety, and radiation protection.						
Prerequisites and co-requisites							

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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