



Subject card

Subject name and code	Radiation detectors, PG_00037318						
Field of study	Technical Physics						
Date of commencement of studies	October 2020	Academic year of realisation of subject			2023/2024		
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	4	Language of instruction			Polish		
Semester of study	7	ECTS credits			1.0		
Learning profile	general academic profile	Assessment form			assessment		
Conducting unit	Zakład Fizyki Organicznych i Perowskitowych Struktur Fotowoltaicznych -> Instytut Fizyki i Informatyki Stosowanej -> Faculty of Applied Physics and Mathematics						
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. inż. Grażyna Jarosz					
	Teachers	dr hab. inż. Grażyna Jarosz					
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	0.0	0.0	0.0	15
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	15	2.0		8.0		25
Subject objectives	To acquaint students with the construction and principles of operation of e-m radiation detectors						
Learning outcomes	Course outcome	Subject outcome			Method of verification		
	K6_W07	The student knows the basic parameters describing e-m radiation			[SW1] Assessment of factual knowledge		
	K6_W02	The student knows the phenomena used in the detection of e-m radiation			[SW1] Assessment of factual knowledge		
Subject contents	1. Electromagnetic radiation, sources and interaction with matter. 2. Thermal radiation. 3. Radiation detectors, classification. 4. Detector noise. 5. Detector parameters. 6. Ionizing radiation detectors. 7. Thermal detectors: bolometers, thermocouples, pyrometers. 8. Scintillation detectors. 9. Semiconductor photon detectors. 10. CCD matrix. 11. X-ray and gamma-ray detectors used in medicine.						
Prerequisites and co-requisites							
Assessment methods and criteria	Subject passing criteria	Passing threshold			Percentage of the final grade		
	two test	51.0%			100.0%		
Recommended reading	Basic literature	G.H. Rieke, Detection of Light, Cambridge University Press					
	Supplementary literature	G.H. Rieke, Detection of Light, Cambridge University Press					
	eResources addresses	Adresy na platformie eNauczanie: Detektory promieniowania 2023/2024 - Moodle ID: 34013 https://enauzanie.pg.edu.pl/moodle/course/view.php?id=34013					

Example issues/ example questions/ tasks being completed	Give the type of noises8 in the detectors
Work placement	Not applicable