

。 GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	, PG_00050108							
Field of study	Biomedical Engineering, Biomedical Engineering, Biomedical Engineering							
Date of commencement of studies	October 2022		Academic year of realisation of subject			2024/2025		
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			2.0		
Learning profile	general academic profile		Assessment form			assessment		
Conducting unit	Institute of Physics and Applied Computer Science -> Faculty of Applied Physics a				and Mathem	atics		
Name and surname	Subject supervisor dr Brygida Mielewska							
of lecturer (lecturers)	Teachers							
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project		Seminar	SUM
	Number of study hours	0.0	15.0	15.0	0.0		0.0	30
	E-learning hours included: 0.0							
Learning activity and number of study hours	Learning activity Participation ir classes includ plan		didactic Participation in consultation hours		Self-study SUM		SUM	
	Number of study hours	30		2.0		18.0		50
Subject objectives	To show experimental aspects of dozymetry of ionizing radiation							
Learning outcomes	Course outcome		Subject outcome			Method of verification		
	[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		 - improvement in understanding nuclear physics, dosimetry and radiological protection, -ability of physical analisys of functions and phenomena appearing in the presence of ionizing radiation - improvement in understanding methods of graphical data presentation and its analysis, interpretation and concluding from graphs illustrating physical processes - ability of applying of simple physical models - student describes problem on the basis of recommended literature 			[SU1] Assessment of task fulfilment		
	[K6_U05] can plan and conduct experiments related to the field of study, including computer simulations and measurements; interpret obtained results and draw conclusions		 ability of performing experiments including radioactive sources and proper data presentation ability of estimating experimental uncertainties directly measured or determined indirectly, ability of analysis of correlations and its estimation 			[SU4] Assessment of ability to use methods and tools		

Subject contents	List of Experiments:						
	1. Parameters of photon beam profile						
	2. Determination of accelarator's dose rate						
	3. Clinical dosimetry						
	4. Experimental functional imaging						
Prerequisites and co-requisites	Physics - elementary course, Nuclear Physics, Radiological Protection						
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade				
	4 lab excercises positively marked and accepted reports	50.0%	100.0%				
Recommended reading	Basic literature	W. Łobodziec "Dozymetria promieniowania jonizującego w radioterapii" Technical Reports series No 398 IAEA "Absorbed dose determination in external beam brachytherapy"					
	Supplementary literature	E.B. Podgorsak "Review of Radiation oncology physics"					
	eResources addresses	Adresy na platformie eNauczanie:					
Example issues/ example questions/ tasks being completed	Types of doses in dosymtery						
Work placement	Not applicable						

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