



## Subject card

Subject name and code	Diploma seminary, PG_00049370						
Field of study	Biomedical Engineering, Biomedical Engineering, Biomedical Engineering						
Date of commencement of studies	October 2024		Academic year of realisation of subject		2027/2028		
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		2.0		
Learning profile	general academic profile		Assessment form		assessment		
Conducting unit	Department of Physics of Electronic Phenomena -> 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	0.0	0.0	30.0	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		2.0		18.0	50
Subject objectives	The aim is to present the progress and results of the bachelor thesis and discussion of the theses of the an exam for bachelor in biomedical engineering						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[K6_U10] can individually plan their own lifelong education, also by means of advanced information and communication technologies (ICT), and communicate with people from their environment, firmly justify their point of view, participate in debates, present, assess and discuss different opinions and points of view, as well as use specialist terminology related to the field of study in communication	student prepares and reports selected issue concerning engineering work and exam	[SU5] Assessment of ability to present the results of task
	[K6_K01] is ready to cultivate and disseminate models of proper behaviour in and outside the work environment; make independent decisions; critically evaluate actions of their own, teams they lead and organisations they are part of; take responsibility for results of these actions; responsibly perform professional roles, including: n - observing rules of professional ethics and require it from others, n - care for the achievements and traditions of the profession	student learns and analyzes the issues related to, among others with quality control w radiotherapy and x-ray diagnosis, plagiarism, individual and team work	[SK5] Assessment of ability to solve problems that arise in practice
	[K6_K02] is ready to critically assess possessed knowledge and acknowledge the importance of knowledge in solving cognitive and practical problems	The student elaborates and presents to the public solution of the selected problem	[SK5] Assessment of ability to solve problems that arise in practice
	[K6_K03] is ready to meet social obligations, co-organise activities for the social environment, initiate actions for the public interest, think and act in an entrepreneurial way	The student participates in joint tasks for the benefit of the social environment	[SK1] Assessment of group work skills
	[K6_W07] Knows and understands, to an advanced extent, the general principles of setting up and development of business entities, forms of individual entrepreneurship and running ventures in the field specific to the field of study	student reports on the student internship that he carried out in business entities	[SW2] Assessment of knowledge contained in presentation
Subject contents	examination questions  1. One-electron atom 2.Imaging in nuclear medicine 3.Radiobiological fundamentals of radiotherapy 4.Biological effects of ionizing radiation. 5. Radiological protection. 6. Nuclear decays. 7. Detection of ionizing radiation. 8. Interaction of high energy radiation with matter. 9. Production and detection of acoustic waves in ultrasonograph. 10. Molecular modelling. 12. Production of radionuclides. 13. Quality assurance in radiodiagnostics and therapy		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	oral presentation 1	50.0%	12.0%
	oral presentation 3	50.0%	22.0%
	oral presentation 4	50.0%	22.0%
	oral presentation 4	50.0%	22.0%
	oral presentation 2	50.0%	22.0%
Recommended reading	Basic literature	Biomedical engineering textbooks	
	Supplementary literature	not existing	
	eResources addresses	Adresy na platformie eNauczanie:	
Example issues/ example questions/ tasks being completed	Bachelor thesis presentation		
Work placement	Not applicable		

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