University of Gdańsk

Subject card

Subject name and code	Radiological Protection 2, PG_00168489						
Field of study	Nuclear safety and radiological protection						
Date of commencement of studies	October 2025		Academic year of realisation of subject	2026/2027			
Education level	Bachelor's studies		Subject group	Obligatory subject group in the field of study 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	2		Language of instruction	Polish			
Semester of study	4		ECTS credits	4.0			
Learning profile	academic		Assessment form	exam			
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	30.0	0.0	0.0	0.0	60
	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	60		0.0		40.0	100
Subject objectives	not applicable						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[BJORL3_W06] knows the basic computational methods used to solve typical problems in radiological protection and nuclear safety	The student knows the basic calculation methods used in the analysis of issues related to radiation protection and nuclear safety. The student understands the principles of applying these methods to assess radiation exposure, design shielding, estimate doses, and model radiation transport processes. The student is able to identify the limitations of individual methods and understands in which situations their application is most appropriate.	[SW4] test/exam - oral or written [SW1] oral statement/ conversation/discussion [SW3] text preparation/written work
	[BJORL3_U04] Can use mathematical and computer apparatus to analyze and solve problems in radiological protection and nuclear safety	The student is able to use appropriate mathematical apparatus and IT tools to analyze and solve problems related to radiation protection and nuclear safety. Students are able to perform calculations related to radiation doses, exposure assessment, shielding effectiveness, and radiation source parameters, as well as analyze and interpret measurement data using appropriate software and basic numerical methods.	[SU1] oral statement/conversation/ discussion [SU3] text preparation/written work [SU4] test/exam - oral or written
	[BJORL3_K06] Is aware of professionalism and adherence to professional ethics	The student is aware of the importance of professionalism in work related to radiation protection and nuclear safety and understands the need to comply with professional ethics. The student is able to identify situations requiring particular responsibility and reliability, respects the standards of conduct applicable to activities involving the use of ionizing radiation sources, and demonstrates a willingness to make decisions in accordance with ethical principles and the public good.	[SK1] oral statement/conversation/ discussion [SK3] text preparation/written work [SK4] test/exam - oral or written
	[BJORL3_U07] Knows how to present in an accessible way the latest developments in radiological protection and nuclear safety and can analyze their legal aspects	The student is able to present the latest achievements and current technical and organizational solutions in the field of radiation protection and nuclear safety in an accessible and understandable manner. The student is able to analyze the related legal conditions, interpret their significance for professional practice, and assess how the implementation of new technologies and procedures affects the level of safety and compliance with applicable regulations.	[SU1] oral statement/conversation/ discussion [SU3] text preparation/written work [SU4] test/exam - oral or written
	[BJORL3_K01] knows the limitations of his own knowledge and understands the need for further education	The student is able to critically assess the scope and limitations of their own knowledge in the field of radiation protection and nuclear safety and recognizes the need to continuously expand it. The student is aware of the need to systematically update information on regulations, technologies, and good practices, and understands the importance of continuing education for the responsible performance of professional tasks.	[SK1] oral statement/conversation/ discussion [SK3] text preparation/written work [SK4] test/exam - oral or written

Course outcome	Subject outcome	Method of verification
[BJORL3_K05] Understands the need and importance of popularization related to radiological protection and nuclear safety	The student understands the importance of popularizing knowledge in the field of radiation protection and nuclear safety and is able to recognize its impact on shaping public awareness. The student is aware of the role of a specialist in providing reliable information on ionizing radiation, safety rules, and applicable regulations, and is willing to engage in educational and informational activities aimed at various audiences.	[SK1] oral statement/conversation/ discussion [SK3] text preparation/written work [SK4] test/exam - oral or written
[BJORL3_W09] Has a basic knowledge of the legal and ethical considerations associated with professional activities	The student has basic knowledge of the legal and ethical conditions related to activities in the field of radiation protection and nuclear safety. The student understands the importance of national and international legal regulations, standards, and guidelines, and is able to explain the ethical aspects of professional responsibility related to working with radioactive materials, public exposure, and environmental protection.	[SW4] test/exam - oral or written [SW1] oral statement/ conversation/discussion [SW3] text preparation/written work
[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 has extensive knowledge of the basic concepts of nuclear physics and chemistry, which form the foundation of radiation protection principles. The student understands the historical development of these fields and is able to explain how the evolution of nuclear research and radiochemistry has contributed to the development of modern nuclear safety regulations and practices. Students also have the basic biological and ecological knowledge necessary to understand the mechanisms of ionizing radiation's impact on living organisms and the environment, enabling them to interpret the basic processes relevant to radiation risk assessment.	[SW4] test/exam - oral or written [SW1] oral statement/ conversation/discussion [SW3] text preparation/written work
[BJORL3_W07] knows the construction and basic principles of operation of scientific apparatus used in radiological protection and aimed at ensuring nuclear safety	The student knows the structure and basic principles of operation of equipment used in radiation protection and nuclear safety systems. The student is able to characterize the operation of the main types of radiation detectors, dosimetry devices, contamination monitors, and control systems. The student also understands their applications, technical limitations, and the importance of instrumental parameters for the correct assessment of the radiation situation.	[SW4] test/exam - oral or written [SW1] oral statement/ conversation/discussion [SW3] text preparation/written work

Subject contents	not applicable
Prerequisites and co-requisites	not applicable

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
not applicable	51.0%	60.0%
not applicable	51.0%	40.0%

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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