

Subject card

Subject name and code	Nuclear energy, PG_00171091						
Field of study	Chemical Business, Chemistry						
Date of commencement of studies	February 2026		Academic year of realisation of subject			2026/2027	
Education level	Master's studies		Subject group			Optional subject group	
Mode of study	full-time studies		Mode of delivery			at the university	
Year of study	1		Language of instruction			Polish	
Semester of study	2		ECTS credits			2.0	
Learning profile	academic		Assessment form			credit	
Conducting unit	Laboratory of Environmental Analytics and Radiochemistry -> Department of Environmental Chemistry and Radiochemistry -> Faculty of Chemistry -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		prof. dr hab. Bogdan Skwarzec				
	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		5.0		40.0	75
Subject objectives	Familiarizing students with the content of the lecture						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[CHEMMU2_W05] Has extended knowledge in the field of the specialisation studied.	has knowledge in the field of the studied specialty	[SW4] test/exam - oral or written [SW1] oral statement/ conversation/discussion
	[CHEMMU2_K05] Understands the need for independent search of information in scientific literature and popular science magazines.	understands the need to search for literature in the field of nuclear energy	[SK1] oral statement/conversation/ discussion [SK4] test/exam - oral or written
	[CHEMMU2_W11] Demonstrates general knowledge about the current trends in the development of chemistry as a science and the latest discoveries in this field.	demonstrates knowledge of the development of chemistry	[SW4] test/exam - oral or written [SW1] oral statement/ conversation/discussion
	[CHEMMU2_U04] Applies acquired knowledge of chemistry and related scientific disciplines.	applies acquired knowledge of chemistry and radiochemistry	[SU1] oral statement/conversation/ discussion [SU4] test/exam - oral or written
	[CHEMMU2_K06] Undertakes research tasks consciously and responsibly, understanding the social aspects of the practical application of the acquired knowledge and skills and the responsibility related to it.	undertakes research tasks	[SK1] oral statement/conversation/ discussion [SK4] test/exam - oral or written
	[CHEMMU2_U06] Presents the results of scientific discoveries in chemistry and related disciplines in an understandable way.	presents results from chemistry and natural sciences	[SU1] oral statement/conversation/ discussion [SU4] test/exam - oral or written
	[CHEMMU2_K01] Knows the limitations of her/his own knowledge; understands the need for further education and can inspire other people to do so.	understands the need for further education	[SK1] oral statement/conversation/ discussion [SK4] test/exam - oral or written
	[CHEMMU2_W02] Has extended and in-depth knowledge in the field of basic chemistry.	has knowledge about the branches of chemistry	[SW4] test/exam - oral or written [SW1] oral statement/ conversation/discussion
Subject contents	the importance of nuclear energy as a source of energy nuclear fission nuclear reactor and its construction fuel cycle		
Prerequisites and co-requisites	basics of nuclear chemistry and environmental radiochemistry		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	written exam	51.0%	100.0%
Recommended reading	Basic literature	Z. Celiński, Nuclear energy, PWN, Warsaw (1991) B. Skwarzec, Environmental radiochemistry, UG Publishing House, 2021	
	Supplementary literature	not applicable	
	eResources addresses		
Example issues/ example questions/ tasks being completed	Define the concept of nuclear fission reaction Describe the structure of a nuclear reactor List the most important stages of the fuel cycle		
Work placement	Not applicable		

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