

**Subject card**

<b>Subject name and code</b>	Nuclear chemistry, PG_00191483						
<b>Field of study</b>	Chemistry						
<b>Date of commencement of studies</b>	October 2025	<b>Academic year of realisation of subject</b>			2026/2027		
<b>Education level</b>	Bachelor's studies	<b>Subject group</b>			Optional subject group		
<b>Mode of study</b>	full-time studies	<b>Mode of delivery</b>			at the university		
<b>Year of study</b>	2	<b>Language of instruction</b>			Polish		
<b>Semester of study</b>	3	<b>ECTS credits</b>			1.0		
<b>Learning profile</b>	academic	<b>Assessment form</b>			credit		
<b>Conducting unit</b>	Faculty of Chemistry -> Rector						
<b>Name and surname of lecturer (lecturers)</b>	<b>Subject supervisor</b>		dr Grzegorz Olszewski				
	<b>Teachers</b>						
<b>Lesson types</b>	<b>Lesson type</b>	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	<b>Number of study hours</b>	0.0	15.0	0.0	0.0	0.0	15
	E-learning hours included: 0.0						
<b>Learning activity and number of study hours</b>	<b>Learning activity</b>	Participation in didactic classes included in study plan		Participation in consultation hours		Self-study	SUM
	<b>Number of study hours</b>	15		1.0		9.0	25
<b>Subject objectives</b>	The aim of the course is to familiarize chemistry students with the content of lectures and auditorium exercises in nuclear chemistry and to consolidate the knowledge resulting from the physical and chemical processes occurring in the atomic nucleus.						
<b>Learning outcomes</b>	<b>Course outcome</b>		<b>Subject outcome</b>		<b>Method of verification</b>		
	[CHEML3_W10] Enumerates and describes the basic aspects of the construction, operation and use of measuring apparatus and equipment used in experimental works in the field of chemistry and related sciences.		Describes the applications of measuring equipment in the field of chemistry and related sciences.		[SW4] test/exam - oral or written [SW1] oral statement/ conversation/discussion		
	[CHEML3_W09] Describes the practical applications of IT tools (computer programmes) for chemical calculations and data analysis.		Describes the practical use of IT tools for chemical calculations		[SW4] test/exam - oral or written [SW1] oral statement/ conversation/discussion		
	[CHEML3_W03] Explains the relationship between the structure of matter and its observed properties.		Explains the relationship between the structure of matter and its properties		[SW4] test/exam - oral or written [SW1] oral statement/ conversation/discussion		
	[CHEML3_W01] Enumerates basic laws and theories in chemistry, physics, mathematics and biology.		Knows laws and theories in chemistry, physics, mathematics and biology.		[SW4] test/exam - oral or written [SW1] oral statement/ conversation/discussion		
	[CHEML3_W05] Has basic knowledge of the chemical specialisation studied.		Has advanced knowledge in the field of chemical speciality studied.		[SW4] test/exam - oral or written [SW1] oral statement/ conversation/discussion		

Subject contents	structure of matter and elementary particles, radioactivity, process of formation of chemical elements, natural and artificial radioactive elements, radiogenic heat of the Earth, nuclear energy, interaction of ionizing radiation with matter, radiation chemistry and radiolysis of water, dosimetry, radiometric and radiochemical methods, isotope separation and labeling methods compounds, use of radionuclides in science, technology and medicine.								
Prerequisites and co-requisites	knowledge of the theory of the structure of matter and atoms of chemical elements  lecture on the basics of chemistry and physics								
Assessment methods and criteria	<table border="1"> <thead> <tr> <th data-bbox="456 573 786 600">Subject passing criteria</th> <th data-bbox="799 573 1139 600">Passing threshold</th> <th data-bbox="1152 573 1482 600">Percentage of the final grade</th> </tr> </thead> <tbody> <tr> <td data-bbox="456 607 786 633">written test</td> <td data-bbox="799 607 1139 633">51.0%</td> <td data-bbox="1152 607 1482 633">100.0%</td> </tr> </tbody> </table>	Subject passing criteria	Passing threshold	Percentage of the final grade	written test	51.0%	100.0%		
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written test	51.0%	100.0%							
Recommended reading	Basic literature	Bogdan Skwarzec, Environmental radiochemistry, University of Gdańsk Publishing House, 2021, ISBN 978-83-8206-111-6  Sobkowski J. Jelińska-Kaźmierczuk M., Nuclear chemistry, Adamantan Publishing House, Warsaw 2006, ISBN: 83-7350-080-4							
	Supplementary literature	not applicable							
	eResources addresses								
Example issues/ example questions/ tasks being completed	The main elementary particles  Radioactive decay  Radiation doses								
Work placement	Not applicable								

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