University of Gdańsk

Subject card

Subject name and code	Nuclear chemistry, PG_00016490		
Field of study	Chemistry		
Date of commencement of studies	October 2024	Academic year of realisation of subject	2025/2026
Education level	Bachelor's studies	Subject group	Optional subject group
Mode of study	full-time studies	Mode of delivery	at the university
Year of study	2	Language of instruction	Polish Polish language
Semester of study	3	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	dr Grzegorz Olszewski	
	Teachers	dr Grzegorz Olszewski	

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	15.0	50

Subject objectives

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.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[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 knowledge in the field of studied chemical specialty.	[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_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.	Knows the structure, operation and application of measuring equipment used in experimental work 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.	chemicznych Describes the practical use of IT tools for chemical calculations	[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

Subject passing criteria	Passing threshold	Percentage of the final grade
written exam	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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