University of Gdańsk

Subject card

Subject name and code	Nuclear chemistry, PG_00191483		
Field of study	Chemistry		
Date of commencement of studies	October 2026	Academic year of realisation of subject	2027/2028
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
Semester of study	3	ECTS credits	1.0
Learning profile	academic	Assessment form	credit
Conducting unit	Faculty of Chemistry -> Rector		
Name and surname of lecturer (lecturers)	Subject supervisor	dr Grzegorz Olszewski	
	Teachers		

Lesson types

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	0.0	15.0	0.0	0.0	0.0	15

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	15	1.0	9.0	25

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_W05] Has basic knowledge of the chemical specialisation studied.	Has advanced knowledge in the field of chemical specialty studied.	[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_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_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_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

<table>
<tr><td>Subject contents</td><td colspan="3">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.</td></tr>
<tr><td>Prerequisites and co-requisites</td><td colspan="3">knowledge of the theory of the structure of matter and atoms of chemical elements

lecture on the basics of chemistry and physics</td></tr>
<tr><td>Assessment methods and criteria</td><td colspan="3"><table><tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr><tr><td>written test</td><td>51.0%</td><td>100.0%</td></tr></table></td></tr>
<tr><td rowspan="3">Recommended reading</td><td>Basic literature</td><td colspan="2">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</td></tr>
<tr><td>Supplementary literature</td><td colspan="2">not applicable</td></tr>
<tr><td>eResources addresses</td><td colspan="2"></td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td colspan="3">The main elementary particles

Radioactive decay

Radiation doses</td></tr>
<tr><td>Work placement</td><td colspan="3">Not applicable</td></tr>
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