University of Gdańsk

Subject card

Subject name and code	Repetitory in general and inorganic chemistry, PG_00054867		
Field of study	Chemistry		
Date of commencement of studies	October 2024	Academic year of realisation of subject	2024/2025
Education level	postgraduate studies	Subject group	Obligatory subject group in the field of study
Mode of study	full-time studies	Mode of delivery	at the university
Year of study	1	Language of instruction	English
Semester of study	1	ECTS credits	3.0
Learning profile	academic	Assessment form	
Conducting unit	Faculty of Chemistry		
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Krzysztof Żamojć	
	Teachers	dr inż. Krzysztof Żamojć	

Lesson types							
	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	30.0	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	Familiarize students with the main aspects of general chemistry and classes of inorganic compounds.

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[CHEMMU2_W04] Applies the acquired knowledge to an in-depth description of the properties of chemical connections, methods of their synthesis and analysis.	Students: know main states of matter; understand structure and properties of atoms as well as other chemical particles; understand essence of main types of chemical bonds; understand main chemical terms, laws and phenomena, know basic terminology and symbolism in terms of elements, inorganic compounds, electrolytes, electrolytic dissociation as well as chemical reactions in water solutions; know physicochemical properties of chosen elements and chemical compounds (oxides and hydrides of metals and nonmetals, bases, acids and salts); know main applications of known chemical substances as well as threats connected with their inappropriate use; know main techniques of calculations in chemistry.	[SW4] test/exam - oral or written [SW2] presentation/project/paper/ report
	[CHEMMU2_U01] Plans and implements chemical experiments of medium complexity.	Students: present plainly – in both speech and writing – correct chemical argumentation; present and explain chemical phenomena and processes, i.e. write molecular and ionic equations for chemical reactions, interpret qualitatively and quantitatively equations for chemical reactions; interpret and analyze information connected with general and inorganic chemistry presented as text, tables, plots, schemes, figures; formulate descriptions of different chemical phenomena and processes, describe them with use of own words and figures (schemes); explain similarities and differences in properties of elements, relations between structure of substances and their properties; notice causal links in chemical processes performed in different conditions, where typical chemical reactions occur; explain course of different phenomena from everyday life with the use of chemical knowledge in correlation with other sciences; interpret information, formulates conclusions and explain opinions.	[SU2] presentation/project/paper/ report [SU4] test/exam - oral or written

Course outcome	Subject outcome	Method of verification
[CHEMMU2_U03] Finds necessary information in specialist literature, databases and other sources, lists basic scientific journals in chemistry.	Students: present plainly – in both speech and writing – correct chemical argumentation; present and explain chemical phenomena and processes, i.e. write molecular and ionic equations for chemical reactions, interpret qualitatively and quantitatively equations for chemical reactions; interpret and analyze information connected with general and inorganic chemistry presented as text, tables, plots, schemes, figures; formulate descriptions of different chemical phenomena and processes, describe them with use of own words and figures (schemes); explain similarities and differences in properties of elements, relations between structure of substances and their properties; notice causal links in chemical processes performed in different conditions, where typical chemical reactions occur; explain course of different phenomena from everyday life with the use of chemical knowledge in correlation with other sciences; interpret information, formulates conclusions and explain opinions.	[SU2] presentation/project/paper/ report [SU4] test/exam - oral or written
[CHEMMU2_W02] Has extended and in-depth knowledge in the field of basic chemistry.	Students: know main states of matter; understand structure and properties of atoms as well as other chemical particles; understand essence of main types of chemical bonds; understand main chemical terms, laws and phenomena, know basic terminology and symbolism in terms of elements, inorganic compounds, electrolytes, electrolytic dissociation as well as chemical reactions in water solutions; know physicochemical properties of chosen elements and chemical compounds (oxides and hydrides of metals and nonmetals, bases, acids and salts); know main applications of known chemical substances as well as threats connected with their inappropriate use; know main techniques of calculations in chemistry.	[SW4] test/exam - oral or written [SW2] presentation/project/paper/ report

Course outcome	Subject outcome	Method of verification
[CHEMMU2_U04] Applies acquired knowledge of chemistry and related scientific disciplines.	Students: present plainly – in both speech and writing – correct chemical argumentation; present and explain chemical phenomena and processes, i.e. write molecular and ionic equations for chemical reactions, interpret qualitatively and quantitatively equations for chemical reactions; interpret and analyze information connected with general and inorganic chemistry presented as text, tables, plots, schemes, figures; formulate descriptions of different chemical phenomena and processes, describe them with use of own words and figures (schemes); explain similarities and differences in properties of elements, relations between structure of substances and their properties; notice causal links in chemical processes performed in different conditions, where typical chemical reactions occur; explain course of different phenomena from everyday life with the use of chemical knowledge in correlation with other sciences; interpret information, formulates conclusions and explain opinions.	[SU2] presentation/project/paper/ report [SU4] test/exam - oral or written
[CHEMMU2_K05] Understands the need for independent search of information in scientific literature and popular science magazines.	Students: understand need for learning, inspire other for learning; cooperate in group, taking different roles; exhibit creativity in determination of priorities necessary for realization of different tasks; understand social aspects of practical use of knowledge and abilities as well as connected with them responsibility.	[SK2] presentation/project/paper/ report [SK4] 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.	Students: understand need for learning, inspire other for learning; cooperate in group, taking different roles; exhibit creativity in determination of priorities necessary for realization of different tasks; understand social aspects of practical use of knowledge and abilities as well as connected with them responsibility.	[SK2] presentation/project/paper/ report [SK4] test/exam - oral or written

Subject contents

Atomistic theory of matter (atomic nucleus, isotopes, electronic structure of atoms, quantum numbers, atomic orbitals), basic chemical terms and lows, periodic table of elements, chemical equations (including redox reactions), chemical bonds, basic types of inorganic compounds, stoichiometry, solutions and their concentrations, thermochemistry, kinetics and chemical equilibrium, theories of acids and bases, equilibria in the solutions of electrolytes, electrolytic dissociation, pH scale, pH of solutions of strong and weak acids and bases, buffer solutions, hydrolysis, elements of electrochemistry.

Prerequisites and co-requisites

Basic knowledge in general and inorganic chemistry.

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
Written exam (test)	51.0%	100.0%

Recommended reading

Basic literature	1. P. Atkins, L. Jones CHEMISTRY. Molecules, matter, and change 2. P. Atkins, L. Jones, L. Laverman Chemical principles. The quest for insight. Extracurricular readings. 3. L. Pauling General chemistry
Supplementary literature	1. M. J. Sienko, R. A. Plane Chemistry: principles and properties 2. J. D. Lee Concise inorganic chemistry 3. F. A. Cotton Basic inorganic chemistry 4. D. A. Cox Inorganic chemistry
eResources addresses	Adresy na platformie eNauczanie:

Example issues/ example questions/ tasks being completed

Work placement

Not applicable

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