University of Gdańsk

Subject card

Subject name and code	General chemistry, PG_00198078						
Field of study	Natural Resources Conservation						
Date of commencement of studies	October 2026		Academic year of realisation of subject	2026/2027			
Education level	Bachelor's 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	Polish			
Semester of study	1		ECTS credits	3.0			
Learning profile	academic		Assessment form	exam			
Conducting unit							
Name and surname of lecturer (lecturers)	Subject supervisor		prof. dr hab. Jolanta Kumirska				
	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		4.0		41.0	75
Subject objectives	Lecture: To present students the general properties of matter and the basic chemical laws governing phenomena occurring in nature.						

Learning outcomes			
	Course outcome	Subject outcome	Method of verification
	[OZPL3_W09] The graduate possesses an advanced comprehension of the current state of knowledge and the latest trends in protection of natural resources, as well as their relationship to other natural disciplines	Student defines the most important chemical laws and concepts governing phenomena occurring in nature. Student indicates the relationship between the structure of the atom and the properties of the element and its position in the periodic table. Student lists the most important types of chemical bonds. Student describes the structure of gases, liquids and solids in terms of the kinetic-molecular model of matter. Student defines molar and percentage concentration. Student describes the most important aspects of energy, kinetics and equilibrium of reactions. Student describes the acid-base properties of aqueous solutions using the concept of pH. Student explains the basic concepts of oxidation-reduction reactions and electrochemical phenomena.	[SW4] test/exam - oral or written
	[OZPL3_U01] The graduate is able to use basic apparatus and research tools, maintains the correct sequence of operations in laboratory and field work and apply the principles of savoir-vivre in practice	Student selects and uses laboratory equipment in accordance with its intended purpose.	[SU4] test/exam - oral or written
	[OZPL3_U04] The graduate is able to plan and carry out simple research tasks in the biological sciences under the guidance of a supervisor	Student (under the supervision of a supervisor) organizes and analyzes the results of experiments and draws correct conclusions based on them. Student conducts calculations using the known chemical laws. Presents the results of the experiment in written form.	[SU4] test/exam - oral or written
	[OZPL3_U06] The graduate is able to make observations and perform basic physical, biological and chemical measurements in the field or laboratory	Student plans, performs and conducts research experiments.	[SU4] test/exam - oral or written
	[OZPL3_K06] The graduate is prepared to demonstrate responsibility for their own and others' safe working conditions in the laboratory and in the field, and is able to recognise hazardous situations and take appropriate action	Student follows the rules of safe conduct in a chemical laboratory in such a way as not to pose a threat to one's own health, that of others, or to the environment. Student uses the information contained in the Material Safety Data Sheets.	[SK1] oral statement/conversation/ discussion [SK4] test/exam - oral or written
	[OZPL3_K07] The graduate is prepared to demonstrate responsibility for the equipment/ materials entrusted, respects the work of others and is ready to consciously apply the principles of savoir-vivre in life	Student demonstrates responsibility for the assigned equipment and reagents, and ensures cleanliness and order at the workplace. Student takes tests and colloquiums and submits reports within the prescribed deadlines.	[SK1] oral statement/conversation/ discussion [SK4] test/exam - oral or written
	[OZPL3_K03] The graduate is ready to identify priorities to achieve a task defined by him/ herself or others	Student uses acquired knowledge and skills to plan and carry out assigned tasks.	[SK1] oral statement/conversation/ discussion [SK4] test/exam - oral or written
	[OZPL3_W10] The graduate possesses a comprehensive understanding of current issues in protection of natural resources and related fields	Student lists the principles of safe handling of hazardous substances. Student lists the most important elements of laboratory equipment and describes their applications for specific activities.	[SW4] test/exam - oral or written
Subject contents	Lecture: Atomistic structure of matter. Periodic table of elements. Basic properties of elements. Chemical bonds. Kinetic-molecular models of states of matter. Solutions, solution concentrations. Energetic effects of chemical reactions. The speed of a chemical reaction. Equilibrium reactions. Acids and bases, pH concept, acid-base equilibria in aqueous solution. Oxidation and reduction reactions. Basics of electrochemistry.		
Prerequisites and co-requisites	lack		

Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	The condition for admission to the exam is obtaining positive grades in the auditorium and laboratory exercises.	0.0%	0.0%
	At least 51% of points in the written exam. The exam is graded in accordance with the guidelines contained in the UG Study Regulations.	51.0%	100.0%
Recommended reading	Basic literature	1. Jones L., Atkins P. 2020. Chemia ogólna. PWN, Warsow 2. Lee J. D. 1994. Zwięzła chemia nieorganiczna. PWN, Warsow 3. Pauling L., Pauling P. 1997. Chemia. PWN, Warsow	
	Supplementary literature	1. Bielański A. 2012. Podstawy chemii nieorganicznej. Tom 1, 2. PWN, Warsow.	
	eResources addresses		
Example issues/ example questions/ tasks being completed			
Work placement	Not applicable		

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