University of Gdańsk

Subject card

Subject name and code	General chemistry, PG_00198064						
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	credit			
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	0.0	0.0	30.0	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		6.0	39.0		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.	[SW2] presentation/project/paper/ report [SW3] text preparation/written work
[OZPL3_W15] The graduate is familiar with the principles of occupational safety and health as well as ergonomics	The student knows and understands the occupational health and safety and ergonomic principles applicable in a chemical laboratory and is able to apply them when conducting experiments.	[SW2] presentation/project/paper/ report [SW3] text preparation/written work
[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 correctly uses laboratory equipment in accordance with its intended purpose.	[SU2] presentation/project/paper/ report [SU3] text preparation/written work [SU8] observation of student's independent or team work
[OZPL3_W10] The graduate possesses a comprehensive understanding of current issues in protection of natural resources and related fields	Student describes the basic methods of testing the properties of chemical substances. 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.	[SW2] presentation/project/paper/ report [SW3] text preparation/written work
[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.	[SK2] presentation/project/paper/ report [SK3] text preparation/written work [SK8] observation of student's independent or team work
[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) plans, performs and conducts research experiments.	[SU2] presentation/project/paper/ report [SU3] text preparation/written work [SU8] observation of student's independent or team work
[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.	[SK2] presentation/project/paper/ report [SK3] text preparation/written work [SK8] observation of student's independent or team work
[OZPL3_U06] The graduate is able to make observations and perform basic physical, biological and chemical measurements in the field or laboratory	Student organizes and analyzes the results of experiments and draws correct conclusions based on them. Student conducts calculations using the known chemical laws and presents the experimental results in written form.	[SU2] presentation/project/paper/ report [SU3] text preparation/written work [SU8] observation of student's independent or team work

	Course outcome	Subject outcome	Method of verification
	[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.	[SK2] presentation/project/paper/ report [SK3] text preparation/written work [SK8] observation of student's independent or team work
Subject contents	Laboratory exercises: Experimental knowledge of selected properties of matter and the operation of the laws of chemistry. Developing the ability to plan, implement and draw conclusions from a scientific experiment. Acquiring the ability to use basic laboratory techniques and safe work with hazardous substances.		
Prerequisites and co-requisites	lack		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	positive grades in all entrance written tests	51.0%	80.0%
	development and presentation of the results in the written form and obtaining partial passes for all experimental tasks	51.0%	20.0%
	performing all exercises provided for in the study program	100.0%	0.0%
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	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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