

Subject card

Subject name and code	General chemistry, PG_00154388						
Field of study	Chemia ogólna - wykład (Wykład)						
Date of commencement of studies	October 2025		Academic year of realisation of subject		2025/2026		
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	Faculty of Chemistry -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		prof. dr hab. Jolanta Kumirska				
	Teachers		prof. dr hab. Jolanta Kumirska				
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		6.0		39.0	75
Subject objectives	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
	[BIOLL3_W13] The graduate knows and understands the principles of evaluating processes and phenomena using physical and/or chemical measurements	Student describes the basic methods of testing the properties of chemical substances	[SW4] test/egzamin - ustny lub pisemny
	[BIOLL3_W09] The graduate knows the most important laws and rules of physics and chemistry underlying biological processes and the properties of chemical elements and compounds	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. 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/egzamin - ustny lub pisemny
	[BIOLL3_U01] The graduate will be able to use basic apparatus and research tools and follow the correct sequence of operations in laboratory and field work	Student plans, performs and carries out research experiments, organizes and analyzes the experimental results, draws correct conclusions based on them, and presents the experimental results in writing. Student selects and uses laboratory equipment in accordance with its intended purpose. Conducts calculations using the known chemical laws.	[SU1] wypowiedź ustna/rozmowa/ dyskusja [SU4] test/egzamin - ustny lub pisemny
	[BIOLL3_K06] The graduate is prepared to take responsibility for the equipment/materials entrusted to them and for their own work and that of others	Student shows responsibility for the entrusted equipment and reagents, ensures cleanliness and order at the workplace. Student takes tests and colloquiums and submits reports within the prescribed deadlines.	[SK1] wypowiedź ustna/rozmowa/ dyskusja [SK4] test/egzamin - ustny lub pisemny
	[BIOLL3_K05] The graduate is prepared to take responsibility for their own and others' safety at work and to recognise risk 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, the health of others and the environment. Student uses the information contained in the Material Safety Data Sheets.	[SK1] wypowiedź ustna/rozmowa/ dyskusja [SK4] test/egzamin - ustny lub pisemny
Subject contents	Lecture: Atomistic structure of matter. Periodic table 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%
	Written exam with open questions, closed questions and calculation tasks. 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, Warszawa 2. Lee J. D. 1994. Związki chemia nieorganiczna. PWN, Warszawa 3. Pauling L., Pauling P. 1997. Chemia. PWN, Warszawa	
	Supplementary literature	1. Bielański A. 2012. Podstawy chemii nieorganicznej. Tom 1, 2. PWN, Warszawa	

	eResources addresses	
Example issues/ example questions/ tasks being completed		
Work placement	Not applicable	

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