

Subject card

Subject name and code	General chemistry, PG_00211070						
Field of study	Medical Biology						
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 the phenomena occurring in nature.						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[BIOLMEDL3_W10] has an advanced understanding of the principles of assessing processes and phenomena occurring within the body, using physical or chemical measurements, and possesses advanced knowledge of experimental methods and the key techniques of the biological sciences that may be applied in medical biology and diagnostics		
	[BIOLMEDL3_W12] is familiar with the principles of occupational safety, health, and ergonomics, as well as the legal, organizational, and ethical considerations involved in the professional practice of a neurobiologist or molecular-biochemical analyst	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
	[BIOLMEDL3_W06] defines the key laws and principles of physics and chemistry that underpin biological processes, describes the properties of elements and chemical compounds, and has an advanced knowledge and understanding of the physicochemical and biological foundations of health sciences	Student defines the most important chemical laws and concepts governing phenomena occurring in nature. It 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 reaction equilibrium. 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
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
	Written exam with open questions, closed questions and computational tasks.	51.0%	100.0%
Recommended reading	Basic literature	1. Jones L., Atkins P. 2020. Chemia ogólna. PWN, Warsaw. 2. Lee J. D. 1994. Związła chemia nieorganiczna. PWN, Warsaw. 3. Pauling L., Pauling P. 1997. Chemia. PWN, Warsaw.	
	Supplementary literature	1. Bielański A. 2012. Podstawy chemii nieorganicznej. Tom 1, 2. PWN, Warsaw.	
	eResources addresses		
Example issues/ example questions/ tasks being completed			
Work placement	Not applicable		

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