

Subject card

Subject name and code	General chemistry, PG_00146869						
Field of study	Genetics and Experimental Biology						
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		1.0		
Learning profile	academic		Assessment form		credit		
Conducting unit							
Name and surname of lecturer (lecturers)	Subject supervisor		prof. dr hab. Jolanta Kumirska				
	Teachers		dr Bożena Karawajczyk				
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	15.0	0.0	0.0	0.0	15
	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	15		2.0		8.0	25
Subject objectives	Auditorium exercises: Developing the ability to apply acquired knowledge to solve specific problems and tasks.						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[GBEL3_U01] Independently perform practical tasks in the field of biological sciences and related disciplines, formulate research problems, analyze their results, and draw conclusions.	Student plans, performs and carries out research experiments, organizes and analyzes the experimental results, draws correct conclusions based on them, presents the experimental results in writing.	[SU1] oral statement/conversation/discussion [SU3] text preparation/written work
	[GBEL3_W09] principles of safety and hygiene, as well as ergonomics in the workplace.	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.	[SW3] text preparation/written work
	[GBEL3_W02] Knowledge of mathematics, physics, and chemistry is necessary for understanding biological phenomena and processes, as well as their application in research methodology.	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 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. Student describes the basic methods of testing the properties of chemical substances.	[SW3] text preparation/written work
	[GBEL3_U03] Proficient in using research equipment and tools, while following the correct sequence of procedures, to conduct basic physical, biological, or chemical observations and measurements in laboratory work within the field of biological sciences.	Student selects and uses laboratory equipment in accordance with its intended purpose. Student conducts calculations using the known chemical laws.	[SU1] oral statement/conversation/discussion [SU3] text preparation/written work
	[GBEL3_U05] Capable of communicating in English at a B2 level, familiar with and utilizing specialized English vocabulary in the fields of biological and medical sciences, as well as legal and economic aspects of research commercialization in daily professional/scientific activities.	Student knows and uses basic English-language specialist vocabulary in the field of chemical sciences.	[SU1] oral statement/conversation/discussion [SU3] text preparation/written work
	[GBEL3_U08] Independently study literature and plan one's own career path.	The student understands the importance of chemical sciences for the development of biological sciences, is able to independently study the literature and improve his knowledge and skills in this field.	[SU1] oral statement/conversation/discussion [SU3] text preparation/written work
Subject contents	Auditorium exercises: Atomic, molecular and molar mass. The relationship of the structure of the atom with its position in the periodic table and the properties of the element. Chemical equation of the reaction, balancing, stoichiometric calculations. Molar and percentage concentration, density of solutions. Calculations related to ionic equilibria in solution: dissociation, hydrolysis, pH.		
Prerequisites and co-requisites	lack		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	minimum 51% in both written tests, positive assessment of the student's work in classes and homework.	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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