



## Subject card

Subject name and code	GENERAL CHEMISTRY, PG_00048911						
Field of study	Chemistry in Construction Engineering						
Date of commencement of studies	October 2020		Academic year of realisation of subject		2020/2021		
Education level	first-cycle studies		Subject group		Obligatory subject group in the field of study Subject group related to scientific research 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		7.0		
Learning profile	general academic profile		Assessment form		exam		
Conducting unit	Department of Inorganic Chemistry -> Faculty of Chemistry						
Name and surname of lecturer (lecturers)	Subject supervisor		prof. dr hab. inż. Jarosław Chojnacki				
	Teachers		prof. dr hab. inż. Jarosław Chojnacki  dr inż. Aleksandra Ziółkowska				
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	30.0	0.0	0.0	0.0	60
	E-learning hours included: 0.0						
	Adresy na platformie eNauczanie: Chemia Ogólna / Chemia I - Moodle ID: 7765 <a href="https://enauzanie.pg.edu.pl/moodle/course/view.php?id=7765">https://enauzanie.pg.edu.pl/moodle/course/view.php?id=7765</a>						
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	60		15.0		100.0	175
Subject objectives	Understanding of principles of general chemistry						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	K6_U07		The student knows the basic theories about the structure of the atom and the molecules and about their mutual reactivity. He/she can use different ways of expressing concentrations of solutions and can calculate the amount of reagents necessary to obtain the desired substance by chemical reaction.		[SU4] Assessment of ability to use methods and tools [SU3] Assessment of ability to use knowledge gained from the subject		
	K6_W03		The student has a well-established knowledge and good theoretical background in general chemistry, including the knowledge necessary to describe and understand the chemical phenomena and processes applied in construction engineering		[SW1] Assessment of factual knowledge		

Subject contents	1. Structure of matter, the standard model.  2. Electronic structure of the atom. 3. Classification of the elements. 4. Chemical bonds. 5. Classification of chemical compounds. 6. Chemical reactions. 7. Concentrations of solutions. 8. Chemical equilibria in water solutions. 9. Basics of electrochemistry. 10. Writing chemical reactions. 11. Stoichiometric Calculations		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Written exam for lectures	55.0%	67.0%
	Written tests for the classroom part	53.0%	33.0%
Recommended reading	Basic literature	1. L. Jones, P. Atkins, Chemia Ogólna. Cząsteczki, materia, reakcje. Wydawnictwo Naukowe PWN Warszawa 2014. 2. A. Bielański, Podstawy Chemii Nieorganicznej, PWN Warszawa 2006 3. Praca zbiorowa, Podstawy Obliczeń Chemicznych, Skrypt w wersji elektronicznej: <a href="https://chem.pg.edu.pl/kchn/chb-chemia-ogolna">https://chem.pg.edu.pl/kchn/chb-chemia-ogolna</a>	
	Supplementary literature	1. M. J. Sienko, R. A. Plane, Chemia, Podstawy i Zastosowania, WNT 2002 2. Z. Bądkowska, E. Koloński, M. Wojnowska, Obliczenia z Chemii Nieorganicznej, Wydawnictwo PG 1996 - skrypt.	
	eResources addresses	Chemia Ogólna / Chemia I - Moodle ID: 7765 <a href="https://enauczanie.pg.edu.pl/moodle/course/view.php?id=7765">https://enauczanie.pg.edu.pl/moodle/course/view.php?id=7765</a>	
Example issues/ example questions/ tasks being completed	Balance the reaction: $\text{MnO}_4^- + \text{SO}_3^{2-} + \dots = \text{Mn}^{2+} + \text{SO}_4^{2-} + \text{H}_2\text{O}$  Give the electronic configuration of basic state and the number of unpaired electrons for $\text{Ga}^+$ , $\text{N}$ i $\text{F}^-$ .  Write chemical equations and name products of electrolysis of aqueous solution of $\text{CaCl}_2$ using platinum electrodes.		
Work placement	Not applicable		