



Subject card

Subject name and code	General and inorganic chemistry, PG_00061888						
Field of study	Materials Engineering						
Date of commencement of studies	October 2026	Academic year of realisation of subject			2026/2027		
Education level	first-cycle 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			4.0		
Learning profile	general academic profile	Assessment form			assessment		
Conducting unit	Department of Inorganic Chemistry -> Faculty of Chemistry -> Faculties of Gdańsk University of Technology						
Name and surname of lecturer (lecturers)	Subject supervisor	prof. dr hab. inż. Jarosław Chojnacki					
	Teachers	prof. dr hab. inż. Jarosław Chojnacki					
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	15.0	0.0	0.0	0.0	45
	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	45		5.0		50.0	100
Subject objectives	Understanding of principles of general and inorganic chemistry						
Learning outcomes	Course outcome		Subject outcome			Method of verification	
	[K6_K01] is ready to continuously expand his knowledge in materials engineering and related sciences, to critically evaluate this knowledge, and to recognise its importance in solving practical and cognitive problems; is aware of his own limitations and knows when to seek expert advice.		He/she understands the need to improve professional and personal competences, is able to properly determine the priorities for the implementation of tasks specified by him or herself or by others			[SK2] Assessment of progress of work	
	[K6_W02] has advanced knowledge of physics and chemistry, including facts, concepts, methods, and theories that enable the description and explanation of complex mechanical and physical phenomena as well as chemical processes; understands their key role in the advancement of civilization		has knowledge of chemistry useful for formulating and solving simple tasks in the field of materials science			[SW1] Assessment of factual knowledge	
Subject contents	Course content – lecture 1. Structure of matter. The standard model, periodic system of the elements. 2. Electronic structure of the atom. 3. Classification of the elements. 4. Chemical bonds. 5. Classification and structure of chemical compounds. 6. Chemical reaction types: acid-base and red-ox. 7. Concentrations of solutions. 8. Chemical equilibria in water solutions. 9. Writing chemical reactions. 10. Stoichiometric calculations. 11. Rate of chemical reactions. 12. Basics of thermochemistry. 13. Basics of electrochemistry. 14. Corrosion of metals						

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. Częsteczki, 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: Skrypt do ćwiczeń 4. Materiały na stronie e-nauczania	
	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		
Example issues/ example questions/ tasks being completed	<p>Balance the reaction: $MnO_4^- + SO_3^{2-} + \dots = Mn^{2+} + SO_4^{2-} + H_2O$</p> <p>Give the electronic configuration of basic state and the number of unpaired electrons for Ga^+, N i F^-.</p> <p>Write chemical equations and name products of electrolysis of aqueous solution of $CaCl_2$ using platinum electrodes.</p>		
Practical activities within the subject	Not applicable		

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