GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Chemistry, PG_00049097		
Field of study	Materials Engineering, Materials Engineering, Materials Engineering, Materials 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
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	6.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Department of Inorganic Chemistry -> Faculty of Chemistry		
Name and surname of lecturer (lecturers)	Subject supervisor	prof. dr hab. inż. Jarosław Chojnacki	
	Teachers	dr inż. Damian Rosiak prof. dr hab. inż. Jarosław Chojnacki	

Lesson types and methods of instruction

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

Adresy na platformie eNauczanie:
Chemia Ogólna / Chemia I - Moodle ID: 7765
https://enauczanie.pg.edu.pl/moodle/course/view.php?id=7765

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	10.0	95.0	150

Subject objectives

Understanding of principles of general and inorganic chemistry

Learning outcomes

Course outcome	Subject outcome	Method of verification
K6_W02	Having completed the programme, a student is familiar with chemical nomenclature and he understands the basic laws and concepts of contemporary chemistry. In addition, he is able to associate the properties of each group of chemical compounds with its structure and bonding. The student is capable of estimating the influence of the structure on the physical and the chemical properties of materials. Moreover, he is able to solve basic assignments and problems in stoichiometry and chemistry of solutions in order to apply them in analytical chemistry and chemical technology.	[SW1] Assessment of factual knowledge
K6_U03	analyses chemical problems in qualitative way and then in quantitative way	[SU2] Assessment of ability to analyse information
K6_K01	appreciates the need of permanent learning and self-training	[SK5] Assessment of ability to solve problems that arise in practice

Subject contents	1. Structure of matter, the standard model. 2. Electronic structure of atom. 3. Classification of Elements. 4. Chemical bonds. 5. Classification of chemical compounds. 6. Chemical reactions. 7. Chemical equilibria in water solutions. 8. Basics of electrochemistry. 9. Writing chemical reactions. 10. Solutions Stoichiometry. 11. Stoichiometric Calculations
Prerequisites and co-requisites	

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
Written exam, lecture	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: https://chem.pg.edu.pl/kchn/im-chemia-i
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 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=7765

Example issues/ example questions/ tasks being completed

Balance the reaction: $MnO_4^- + SO_3^{2-} + ... = Mn^{2+} + SO_4^{2-} + H_2O$

Draw Lewis structures for molecules of SO_2 i HNO_3.

Write half-equations (for oxidation and reduction) for corrosion of iron in the presence of water and oxygen.

Work placement

Not applicable