



Subject card

Subject name and code	Inorganic chemistry, PG_00048518						
Field of study	Chemical Technology						
Date of commencement of studies	October 2022	Academic year of realisation of subject				2023/2024	
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	2	Language of instruction				Polish	
Semester of study	3	ECTS credits				6.0	
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	dr hab. inż. Rafał Grubba					
	Teachers						
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	60.0	0.0	0.0	75
	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	75	5.0	70.0	150		
Subject objectives	A knowledge of principal concepts in inorganic chemistry.						
Learning outcomes	Course outcome	Subject outcome				Method of verification	
	K6_W02	He has basic knowledge in the field of inorganic, organic, physical and analytical chemistry, including the preparation, physical and chemical properties of selected groups of compounds, their quantitative and qualitative analysis as well as measurements and determination of reaction parameters, phenomena and chemical processes occurring in chemical technology.				[SW1] Assessment of factual knowledge	
	K6_U11	Has a habit of continuous learning, understands the need to improve professional, personal and social competences.				[SU2] Assessment of ability to analyse information	
	K6_U03	Student is able to design a synthesis of simple chemical compounds based on his knowledge of inorganic, organic, physical and analytical chemistry. He is able to carry out simple physicochemical measurements. He can plan and implement his own learning.				[SU3] Assessment of ability to use knowledge gained from the subject	

Subject contents	<p>Lecture:- Properties, application and technological significance of selected elements of the main groups of the periodic table: group 14, group 15, group 16, group 17, group 18- Metals: chemical and physical properties of metals, metallic bond, galvanic series, characteristics of metals d and f blocks, basics of chemistry of complex compounds- Selected inorganic technology processes Laboratory: Execution by each student of 10 exercises in the field of qualitative analysis (selected cations, anions and salts composed of these ions). The analysis is carried out mainly using chemical methods. As part of the exercise, students learn the physical and chemical properties of inorganic compounds, methods of their separation and identification. They also master the experimental foundations of inorganic chemistry</p>											
Prerequisites and co-requisites	The knowledge of inorganic chemistry at the level of the second semester of studies.											
Assessment methods and criteria	<table border="1"> <thead> <tr> <th data-bbox="456 551 794 577">Subject passing criteria</th> <th data-bbox="798 551 1136 577">Passing threshold</th> <th data-bbox="1139 551 1479 577">Percentage of the final grade</th> </tr> </thead> <tbody> <tr> <td data-bbox="456 582 794 658">Written tests and reports on laboratory exercises - ten times during semester</td> <td data-bbox="798 582 1136 658">60.0%</td> <td data-bbox="1139 582 1479 658">40.0%</td> </tr> <tr> <td data-bbox="456 663 794 696">Written exam</td> <td data-bbox="798 663 1136 696">60.0%</td> <td data-bbox="1139 663 1479 696">60.0%</td> </tr> </tbody> </table>			Subject passing criteria	Passing threshold	Percentage of the final grade	Written tests and reports on laboratory exercises - ten times during semester	60.0%	40.0%	Written exam	60.0%	60.0%
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Written exam	60.0%	60.0%										
Recommended reading	Basic literature	<ul style="list-style-type: none"> • L. Jones, P. Atkins "Chemia ogólna"; PWN, 2004, or more recent issues (Polish translation from English "General Chemistry" original) • A. Bielański Podstawy chemii nieorganicznej (PWN) recent issues; • P.A. Cox Krótkie wykłady, chemia nieorganiczna, PWN, 2003; (Polish translation from English "Instant Notes in Inorganic Chemistry" original) 										
	Supplementary literature	<ul style="list-style-type: none"> • online materials available on a web page: http://www.kchn.pg.gda.pl/?p=didactics_ch_chn 										
	eResources addresses											
Example issues/ example questions/ tasks being completed	<ol style="list-style-type: none"> 1. Ammonia is a technically important compound. Give his Lewis formula. Discuss the conditions of its industrial production in detail. Justify the conditions of the reaction using the rule of contrariness. 2. Sulfuric acid (VI) is an important product of the chemical industry. Describe his method of industrial production. Give Lewis formulas and molecular shapes for HSO₃, SO₂, SO₃. 3. What is the reaction of the aqueous solution of: a) beryllium nitrate (V), b) rubidium orthoarsenate (V), c) thallium nitrate (I)? Give the reaction responsible for the pH of these solutions or state that salt does not react with water. 											
Work placement	Not applicable											