GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Inorganic chemistry laboratory, PG_00061896		
Field of study	Materials Engineering, Materials Engineering		
Date of commencement of studies	October 2025	Academic year of realisation of subject	2025/2026
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	2	ECTS credits	3.0
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	dr hab. Katarzyna Kazimierczuk prof. dr hab. inż. Jarosław Chojnacki	

Lesson types

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	0.0	0.0	30.0	0.0	0.0	30

E-learning hours included: 0.0

eNauczanie source addresses:

Moodle ID: 4265 2026_Laboratorium z chemii nieorganicznej
https://enauczanie.pg.edu.pl/2025/course/view.php?id=4265

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	30	10.0	35.0	75

Subject objectives

Confrontation of knowlegde on reactivity of basic classess of inorganic substances: elements, acids, bases and salts with laboratory practice. Consolidation of material learnt during the first semester of Chemistry I. Basics of classical qualitative analysis of inorganic ions.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K6_U01] Can properly use selected analytical, simulation and experimental methods, as well as devices for measuring the fundamental properties of materials and technological processes.	The Student selects a method of analysis which allows unambigueous identification of the sample	[SU4] Assessment of ability to use methods and tools
[K6_W02] has knowledge of physics and chemistry, useful for formulating and solving simple problems within the scope of materials science	Gain knowledge about chemical reactivity of substances in solutions: salts, acids, alkalia and properties of popular metals	[SW1] Assessment of factual knowledge
[K6_K01] Understands the need to improve professional and personal competencies; is conscious of own limitations and knows when to turn to experts, properly establishes priorities helping to accomplish tasks defined by oneself or others.	Understands the importance of different behaviour of separate ions and mixtures. Appreciates the need to extend the skills gained	[SK5] Assessment of ability to solve problems that arise in practice

<table>
<tr><td>Subject contents</td><td>Course content – laboratory
During the laboratory classes a student examines over one hundred processes of chemical reaction. On the basis of literature he chooses proper reactions and while examining them, he identifies the presence of specific ions in solutions. Next, he examines the basic chemical and physical properties of the material received for further analysis.
Later, the student plans to conduct proper experiments. Finally, he analyses their processes and on this basis, he identifies the received sample for analysis.

1. Qualitative analysis of selected cations (Ag^{+}, Hg_2^{2+}, Pb^{2+}, Cu^{2+}, Hg^{2+}, Cd^{2+}, Bi^{3+}, Ni^{2+}, Co^{2+}, Fe^{3+}, Zn^{2+}, Mn^{2+}, Al^{3+}, Ca^{2+}, Ba^{2+}, K^{+}, NH_4^{+}, Na^{+}, Mg^{2+}).

2. Qualitative analysis of selected cations. (Cl, Br, I, $[Fe(CN)_6]^4$, $[Fe(CN)_6]^3$, NO_2, CH_3COO, NO_3, MnO_4, SO_3^2, CO_3^2, $C_2O_4^2$, BO_3^3, $C_4H_4O_6^2$, PO_4^3, $S_2O_3^2$, CrO_4^2, SO_4^2)

3. Qualitative analysis of selected inorganic compounds: acids, bases, salts and metals.</td></tr>
<tr><td>Prerequisites and co-requisites</td><td>None</td></tr>
<tr><td>Assessment methods and criteria</td><td><table><tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr><tr><td>Sum of points for introductory tests and analyses</td><td>55.0%</td><td>100.0%</td></tr></table></td></tr>
<tr><td>Recommended reading</td><td><table><tr><td>Basic literature</td><td>1. J. Prejzner, Chemia Nieorganiczna - Laboratorium - skrypt, Wydawnictwo PG 2004
2. J. Minczewski, Z. Marczenko, Chemia Analityczna Tom 1, PWN Warszawa 1997
3. J. Sawicka i inni, Tablice Chemiczne , Wydawnictwo Podkowa Gdańsk 2002</td></tr><tr><td>Supplementary literature</td><td>No recommendations</td></tr><tr><td>eResources addresses</td><td></td></tr></table></td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td></td></tr>
<tr><td>Practical activites within the subject</td><td>Not applicable</td></tr>
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