University of Gdańsk

Subject card

Subject name and code	General chemistry, PG_00053379		
Field of study	Chemical Business		
Date of commencement of studies	October 2026	Academic year of realisation of subject	2026/2027
Education level	Bachelor's 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	3.0
Learning profile	academic	Assessment form	credit
Conducting unit	Laboratory of Physicochemistry of Coordination Complexes -> Department of General and Inorganic Chemistry -> Faculty of Chemistry -> Rector		
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. Joanna Makowska	
	Teachers		

Lesson types

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	0.0	45.0	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	8.0	22.0	75

Subject objectives

- to consolidate basic theoretical knowledge of inorganic chemistry

- to introduce important problems of modern inorganic chemistry

- introduction to the most important contemporary issues in inorganic chemistry which constitute progress in this field

- to develop the ability to conduct experiments independently, to interpret the results obtained and to solve problems while conducting chemical experiments

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Learning outcomes

Course outcome	Subject outcome	Method of verification
[BCHINŻ_U08] Uses the chemical nomenclature and engineering terminology properly.	Appropriately uses chemical nomenclature and engineering terminology.	[SU1] oral statement/conversation/ discussion
[BCHINŻ_W03] Describes the techniques of higher mathematics and IT tools necessary to describe and model chemical phenomena and technological processes.	It describes at an advanced level the techniques of higher mathematics and IT tools necessary to describe and model chemical phenomena and technological processes.	[SW1] oral statement/ conversation/discussion
[BCHINŻ_W02] Enumerates basic laws and theories in chemistry, physics and mathematics necessary to formulate and solve simple engineering tasks.	Lists the laws and theories in chemistry, physics and mathematics necessary to formulate and solve simple engineering tasks.	[SW5] implementation of a problem task

<table>
<tr><td>Subject contents</td><td>Topics of the lecture: atomistic theory of matter (atomic nucleus, isotopes, electronic structure of atoms, quantum numbers, atomic orbitals), basic chemical terms and lows, periodic table of elements, chemical equations (including redox reactions), chemical bonds, basic types of inorganic compounds, stoichiometry, solutions and their concentrations, thermochemistry, kinetics and chemical equilibrium, theories of acids and bases, electrolytic dissociation, pH scale, pH of solutions of strong and weak acids and bases, buffer solutions, hydrolysis, elements of electrochemistry.

Topics of auditory classes: basic chemical terms and laws, basic types of inorganic compounds, balancing redox reactions, stoichiometry, the concentrations of the solutions, kinetics and chemical equilibrium, equilibria in the solutions of electrolytes.</td></tr>
<tr><td>Prerequisites and co-requisites</td><td></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></td><td>51.0%</td><td>100.0%</td></tr></table></td></tr>
<tr><td>Recommended reading</td><td><table><tr><td>Basic literature</td><td>A. Literatura wymagana do ostatecznego zaliczenia zajęć (zdania egzaminu):

A.1. wykorzystywana podczas zajęć
Praca zbiorowa Obliczenia z chemii ogólnej - skrypt UG, Gdańsk 2011

Praca zbiorowa - Ćwiczenia laboratoryjne z chemii ogólnej. I Część teoretyczna

Praca zbiorowa - Ćwiczenia laboratoryjne z chemii ogólnej. II Część doświadczalna</td></tr><tr><td>Supplementary literature</td><td>A.2. studiowana samodzielnie przez studenta

A. Bielański Podstawy chemii nieorganicznej
J. D. Lee Zwięzła chemia nieorganiczna, PWN 1997
L. Jones, P. Atkins Chemia ogólna, PWN 2004

B. Literatura uzupełniająca
L. Pajdowski Chemia ogólna, PWN 1999</td></tr><tr><td>eResources addresses</td><td></td></tr></table></td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td>brak</td></tr>
<tr><td>Work placement</td><td>Not applicable</td></tr>
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