University of Gdańsk

Subject card

Subject name and code	Diploma lecture - Methods to study bioinorganic compounds, PG_00081851		
Field of study	Chemistry		
Date of commencement of studies	October 2026	Academic year of realisation of subject	2028/2029
Education level	Bachelor's studies	Subject group	Obligatory subject group in the field of study Optional subject group
Mode of study	full-time studies	Mode of delivery	at the university
Year of study	3	Language of instruction	Polish
Semester of study	6	ECTS credits	2.0
Learning profile	academic	Assessment form	credit
Conducting unit	Department of Bioinorganic Chemistry -> Faculty of Chemistry -> Rector		
Name and surname of lecturer (lecturers)	Subject supervisor	prof. dr hab. Mariusz Makowski	
	Teachers		

Lesson types

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

E-learning hours included: 0.0

Additional information:

Lecture with multimedia presentation

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	5.0	15.0	50

Subject objectives

Through lectures, to understand and consolidate basic concepts and issues related to the broadly understood
the application of experimental and theoretical methods used for quantitative and qualitative testing of bioinorganic compounds.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[CHEML3_W02] Describes the properties of elements and the most important chemical compounds, enumerates the methods of their preparation and methods of analysis.	1. Knows the basic classification systems of physicochemical methods used to quantitative and qualitative testing of inorganic compounds. 2. Knows the processes and understands the interactions that occur during testing in depending on the method used. 3. Knows the terminology and chemical nomenclature of compounds inorganic	[SW4] test/exam - oral or written
[CHEML3_K01] Identifies the level of her/his own knowledge and skills and the need for continuous learning and personal development.	1. Understands the need for continuous learning. 2. Demonstrates creativity in working independently and in teamwork. 3. Understands the social aspects of the practical application of the acquired knowledge and skills and related responsibilities.	[SK4] test/exam - oral or written [SK8] observation of student's independent or team work
[CHEML3_W03] Explains the relationship between the structure of matter and its observed properties.	1. Knows the basic classification systems of physicochemical methods used to quantitative and qualitative testing of inorganic compounds. 2. Knows the processes and understands the interactions that occur during testing in depending on the method used. 3. Knows the terminology and chemical nomenclature of compounds inorganic	[SW4] test/exam - oral or written
[CHEML3_U08] Presents in an understandable way the basic facts about chemistry using a scientific language typical of chemical sciences.	1. Has the ability to solve chemistry issues independently inorganic. 2. Can use basic analytical techniques (potentiometry, conductometry, voltamperometry and spectrophotometry, and others) for testing.	[SU4] test/exam - oral or written [SU8] observation of student's independent or team work

Subject contents

UV-vis spectroscopy; IR, spectrofluorimetry. Potentiometry, volamperometry. Least squares method (equid and cvequid). Computational methods ab initio, molecular dynamics and others used to describe compounds of bio-inorganic importance.

Prerequisites and co-requisites

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
passing the lecture on the basis of obtaining a positive assessment from the written test consisting of open-ended questions covering the issues mentioned in the contents programmatic	50.0%	100.0%

Recommended reading

Basic literature	1. P.A. Cox, Krótkie wykłady, chemia nieorganiczna, PWN, Warszawa, 2003. 2. F.A. Cotton, G. Wilkinson, P.L. Gaus, Chemia nieorganiczna, podstawy, PWN, Warszawa, 1995.
Supplementary literature	1. C.E. Housecroft, A.G. Sharpe, Inorganic chemistry, Pearson, Prentice Hall, Ed I (2001), Ed II (2005) lub Ed III (2008); 2. Papers recommended by a teacher.
eResources addresses	

Example issues/ example questions/ tasks being completed

Effect of solvent (type, polarity) on location and intensity (chrome effects, molar extinction coefficient) of absorption bands of chemical compounds observed in UV-Vis spectra

Work placement

Not applicable

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