

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 2025		Academic year of realisation of subject		2027/2028		
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_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
	[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_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_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
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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