

Subject card

Subject name and code	Monographic lecture - Intermolecular interactions in bioinorganic systems, PG_00082499						
Field of study	Chemistry						
Date of commencement of studies	October 2026		Academic year of realisation of subject		2027/2028		
Education level	Master'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	2		Language of instruction		Polish		
Semester of study	4		ECTS credits		3.0		
Learning profile	academic		Assessment form		credit		
Conducting unit	Department of Bioinorganic Chemistry -> Faculty of Chemistry -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. Aleksandra Dąbrowska				
	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						
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		40.0	75
Subject objectives	1. Understanding of basic concepts and bonds/interaction concepts in bioinorganic chemistry. 2. Indication of the role of bonds/interactions and their influence on the properties of matter and selected biochemical processes. 3. Basics of Pharmacokinetics and LADME profile						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[CHEMMU2_W01] Uses knowledge of spectroscopic methods of chemical compound analysis.		Knows the basic laws and concepts of selected spectroscopic methods (UV-VIS, IR) as well as methods used for determining the physicochemical parameters.		[SW4] test/exam - oral or written		
	[CHEMMU2_W05] Has extended knowledge in the field of the specialisation studied.		Has specialist knowledge of basic concepts, principles and theories of bonds and interactions also in relation to general natural phenomena		[SW4] test/exam - oral or written		
	[CHEMMU2_K01] Knows the limitations of her/his own knowledge; understands the need for further education and can inspire other people to do so.		Understands the importance of basic knowledge regarding intermolecular bonds and interactions as well as practical aspects of applying the acquired knowledge and skills.		[SK4] test/exam - oral or written		
	[CHEMMU2_W11] Demonstrates general knowledge about the current trends in the development of chemistry as a science and the latest discoveries in this field.		Knows the basic assumptions of pharmacokinetics and methods for designing drugs based on knowledge of biochemical mechanisms.		[SW4] test/exam - oral or written		
Subject contents	Atoms and molecules and their surroundings. Theories of chemical bonds. Types of intermolecular interactions and their energy. Factors influencing the strength of bonds and interactions as well as physicochemical properties. Elements of pharmacokinetics.						

Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	test-II	51.0%	30.0%
	test-I	51.0%	30.0%
	exam	51.0%	40.0%
Recommended reading	Basic literature	1. P.A. Cox, <i>Krótkie wykłady, chemia nieorganiczna</i> , PWN Warszawa (2003). 2. F.A. Cotton, G. Wilkinson, P.L. Gaus, <i>Chemia nieorganiczna - podstawy</i> , PWN Warszawa (1995).	
	Supplementary literature	1. N.N. Greenwood, A. Earnshaw, <i>Chemistry of the elements</i> , Pergamon, wyd. II (2005). 2. C.E. Housecroft, A.G. Sharpe, <i>Inorganic chemistry</i> , Pearson, Prentice Hall, Ed III (2008). 3. S.J. Lippard, J.M. Berg, <i>Podstawy chemii bionieorganicznej</i> , PWN Warszawa (1998). 4. I.G. Kaplan, <i>Intermolecular Interactions</i> , chap. 1,2,5, Wiley (2006). 5. P. Schuster, G. Zundel and C. Sandorfy, Eds., <i>The Hydrogen Bond, Recent Developments in Theory and Experiments</i> , North Holland (1976). 6. Publikacje tematyczne wskazane przez prowadzącego.	
	eResources addresses	Basic https://bg.ug.edu.pl/ - books and e-books	
	Example issues/ example questions/ tasks being completed		
Work placement	Not applicable		

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