


**KAPITAŁ LUDZKI**  
NARODOWA STRATEGIA SPÓJNOŚCI

 Projekt współfinansowany przez  
Unię Europejską w ramach  
Europejskiego Funduszu  
Społecznego

**UNIA EUROPEJSKA**  
EUROPEJSKI  
FUNDUSZ SPOŁECZNY


<b>Course title</b>		<b>ECTS code</b>	
Monographic lecture - Intermolecular interactions in bioinorganic systems		13.3.0917	
<b>Name of unit administrating study</b>			
null			
<b>Studies</b>			
<b>faculty</b>	<b>field of study</b>	<b>type</b>	drugiego stopnia
Wydział Chemii	Chemia	<b>form</b>	stacjonarne
		<b>specjalty</b>	wszystkie
		<b>specialization</b>	wszystkie
<b>Teaching staff</b>			
prof. dr hab. Mariusz Makowski; dr hab. Aleksandra Dąbrowska, profesor uczelni			
<b>Forms of classes, the realization and number of hours</b>		<b>ECTS credits</b>	
<b>Forms of classes</b>		3	
Lecture		classes - 30 h	
<b>The realization of activities</b>		tutorial classes – 10 h	
classroom instruction		student's own work – 35 h	
<b>Number of hours</b>		Total: 75 h - 5 ECTS	
Lecture: 30 hours			
<b>The academic cycle</b>			
2023/2024 summer semester			
<b>Type of course</b>		<b>Language of instruction</b>	
obligatory		polish	
<b>Teaching methods</b>		<b>Form and method of assessment and basic criteria for evaluation or examination requirements</b>	
multimedia-based lecture		<b>Final evaluation</b>	
		Graded credit	
		<b>Assessment methods</b>	
		written test with open questions	
		<b>The basic criteria for evaluation</b>	
		Completion of the lecture based on obtaining a positive grade from a written test consisting of open questions covering the issues listed in the program contents. Passing criteria in accordance with the UG Studies Regulations.	
<b>Method of verifying required learning outcomes</b>			
<b>Required courses and introductory requirements</b>			
<b>A. Formal requirements</b>			
none			
<b>B. Prerequisites</b>			
none			
<b>Aims of education</b>			
Leading, through lectures, to understanding and grounding the basic concepts and concepts of intermolecular interactions in bioinorganic chemistry and to indicate the role they play in the chemical bases of selected biochemical processes.			
<b>Course contents</b>			
Theories of chemical bonds. Types of intermolecular interactions. The molecule and its surroundings. Intermolecular and intramolecular hydrogen bonds. Low energy intermolecular interactions in complex compounds. Factors influencing the strength of intermolecular interactions. Intermolecular interactions and physical properties. Theoretical and experimental evidence of the existence of hydrogen bonds. Elements of pharmacokinetics.			
<b>Bibliography of literature</b>			

## Literature required to pass the course

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.

## Extracurricular readings

1. N.N. Greenwood, A. Earnshaw, Chemistry of the elements, Pergamon, wyd. II, 2005.
2. C.E. Housecroft, A.G. Sharpe, Inorganic chemistry, Pearson, Prentice Hall, Ed I (2001), Ed II (2005) lub Ed III (2008);
3. S.J. Lippard, J.M. Berg, Podstawy chemii bionieorganicznej, PWN, Warszawa, 1998.
4. I.G. Kaplan, Intermolecular Interactions, chap. 1,2,5, Wiley, 2006.
5. P. Schuster, G. Zundel and C. Sandorfy, Eds., The Hydrogen Bond, Recent Developments in Theory and Experiments, North Holland., 1976.
7. Czasopisma wskazane przez prowadzącego zajęcia.

**The learning outcomes (for the field of study and specialization)****Knowledge**

defines basic concepts in the chemistry of bioinorganic interactions;  
lists and characterizes basic biological ligands  
is able to describe the structure and functions of the most important bioinorganic systems;

**Skills**

can describe the structure and functions of the most important inorganic organic systems;

**Social competence**

Is interested in basic chemical processes taking place in the environment and follows literature reports indicated by the subject

**Contact**

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