


KAPITAŁ LUDZKI
NARODOWA STRATEGIA SPÓJNOŚCI

 Projekt współfinansowany przez
Unię Europejską w ramach
Europejskiego Funduszu
Społecznego

UNIA EUROPEJSKA
EUROPEJSKI
FUNDUSZ SPOŁECZNY


Course title			ECTS code	
Biometals			13.3.0400	
Name of unit administrating study				
null				
Studies				
faculty		field of study		type
Wydział Chemii		Chemia		drugiego stopnia
				form
				stacjonarne
				specjalty
				analityka i diagnostyka chemiczna
				specialization
				wszystkie
Teaching staff				
prof. dr hab. Mariusz Makowski				
Forms of classes, the realization and number of hours			ECTS credits	
Forms of classes			1	
Lecture			lecture: 15 hours	
The realization of activities			consultations 2 hours	
classroom instruction			self-work 8 hours	
Number of hours			TOTAL: 25 hours - 1 ECTS	
Lecture: 15 hours				
The academic cycle				
2023/2024 winter semester				
Type of course		Language of instruction		
obligatory		polish		
Teaching methods		Form and method of assessment and basic criteria for eveluation or examination requirements		
multimedia-based lecture		Final evaluation		
		Graded credit		
		Assessment methods		
		Test with both open and closed type of questions		
		The basic criteria for evaluation		
		positive evaluation of the written exam consisting of 10-20 questions covering the issues listed in the program contents; answers to questions will require providing answers within the scope of the assumed learning outcomes.		
Method of verifying required learning outcomes				
Required courses and introductory requirements				
A. Formal requirements				
recommended but not obligatory: inorganic chemistry, coordination chemistry				
B. Prerequisites				
basic knowledge in inorganic chemistry, and coordination chemistry (recommended)				
Aims of education				
• make students familiar with problems combining chemistry, biology and medicine				
• introduction of fundamental knowledge in particular from biochemistry (such as a role of bioelemnts as iron, copper, zinc, cobalt, manganese, nickel, and chromium in living organisms.				
Course contents				
Lecture topics: chemistry of selected metals and their importance in biology, medicine and the environment. Their absorption, storage and function in bacteria, plants, in living organisms.				
Bibliography of literature				

<p>A. Fundamental literature:</p> <p>A.2. Literature for the self-studies</p> <p>L. Stephen, B. Jeremy – Podstawy chemii bioinorganicznej - in Polish</p> <p>R. M. Roat-Malone – Bioinorganic Chemistry: A Short Course</p> <p>E. Ochiai – Bioinorganic Chemistry: a survey</p> <p>B. Additional literature:</p> <p>Scientific papers recommended by the lecturer</p>	
The learning outcomes (for the field of study and specialization)	Knowledge Knows and understands rules, concepts and phenomena combining chemistry, biology and medicine; uses terminology and chemical symbolism related to the role of metals in biology, medicine and the environment; understands biochemical phenomena and processes, including specialized concepts.
	Skills Reads and analyzes information presented in the form of: chemical text, chart, diagram, drawing; completes the missing information on the basis of the table, chart, diagram, drawing and text; processes information according to the given rules: constructs diagrams of biochemical processes; formulates descriptions of the presented phenomena and processes: describes in words or by means of a drawing (scheme) the course, phenomena or processes; recognizes cause-and-effect relationships that occur in biochemical processes depending on the conditions under which complicated reactions occur; explains the course of phenomena encountered in everyday life, using chemical knowledge in correlation with other natural sciences; interprets the information and formulate conclusions and justifies opinions.
	Social competence understands the need for further education. is able to precisely formulate questions that help deepen one's understanding of a given topic or find missing elements of reasoning; understands and appreciates the importance of intellectual honesty in the actions of their own and other people; acts ethically; understands the need for popular presentation of selected issues in chemistry to non-specialists; can independently search for information in literature, including foreign language;
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