



UNIWERSYTET GDAŃSKI

Course title Chemia bionieorganiczna/Bioinorganic chemistry		ECTS code 13.3.1161	
Name of unit administrating study Faculty of Chemistry			
Studies			
Field of study	Type	Form	
Chemistry	Master	Full-time studies	
Teaching staff Prof. dr hab. Mariusz Makowski			
Forms of classes, the realization and number of hours		ECTS credits	
A. Forms of classes, in accordance with the UG Rector's regulations lecture, laboratory classes		classes 45 h Tutorial classes 2 h Student's own work 3 h TOTAL: 50 h - 2 ECTS	
B. The realization of activities In-class learning			
C. Number of hours Lecture 15 h, laboratory classes 30 h			
The academic cycle Second year, winter semester			
Type of course obligatory		Language of instruction Polish	
Teaching methods Lectures including multimodal presentations		Form and method of assessment and basic criteria for evaluation or examination requirements	
		A. Final evaluation, in accordance with the UG study regulations Course completion (with a grade)	
		B. Assessment methods test	
		C. The basic criteria for evaluation positive grade from written test consisting of 12-20 open questions comprising issues listed in the program content (lecture)	
Required courses and introductory requirements			
A. Formal requirements none			
B. Prerequisites basic knowledge of inorganic and coordination chemistry			
Aims of education			
<ul style="list-style-type: none"> • familiarity with the problems occurring on the border of chemical, biological and medical sciences • introduction of both basic and specialized knowledge of biochemistry (in particular, information about the role that bio-elements such as iron, copper, zinc, cobalt, manganese, nickel and chromium, play in living organisms) 			
Course contents			
Bioinorganic chemistry - explanation of the term, foundations; Review of the most important groups of compounds (sugars, lipids, proteins and amino acids, vitamins - coenzymes, DNA / RNA) necessary for life; Biological demand for metals and inorganic compounds; The functions of metal ions in proteolysis. Methods of studies on bioinorganic compounds. Redox reactions with electron transfer in biological systems. Oxygen transfer and transport processes in cells. Circulation of nitrogen at the molecular level. Metal physiology. Medical chemistry of inorganic compounds. Environmental chemistry of bioinorganic compounds			

Bibliography of literature**A. Literature required to pass the course**

A.2. Literature for individual studies:

L. Stephen, B. Jeremy – Podstawy chemii bioinorganicznej

R. M. Roat-Malone – Bioinorganic Chemistry: A Short Course

E. Ochiai – Bioinorganic Chemistry: a survey

B. Extracurricular readings

Bioinorganic Chemistry and Applications – science magazine

Knowledge

Student knows and understands the law, concepts and phenomena on the border of three areas: chemistry, biology and medicine.

Social competence

Student understands the need for further education. can formulate questions precisely to deepen understanding of a given topic or to find missing elements of reasoning; understands and appreciates the importance of intellectual honesty in own and other people's actions; act 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.