UNIWERSYTET GDAŃSKI

Course title Biometale / Biometals	**ECTS code** 13.3.0400

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

A. Forms of classes, in accordance with the UG Rector's regulations
lecture

B. The realization of activities
in-class learning

C. Number of hours
15 h lecture

ECTS credits 1

classes - 15 h
tutorial classes – 2 h
student's own work – 8 h

Total: 25 h - 1 ECTS

The academic cycle
2020/21 winter semester

Type of course
obligatory

Language of instruction
Polish

Teaching methods

Lecture with multimedia presentation

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 with both open and closed type of questions

C. The basic criteria for evaluation or exam requirements

• 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.

Required courses and introductory requirements
inorganic chemistry, coordination chemistry, basic and fundamental knowledge in inorganic and coordination chemistry

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, manganase, 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

A. Literature required to pass the course

L. Stephen, B. Jeremy – Podstawy chemii bionieorganicznej
R. M. Roat-Malone – Bioinorganic Chemistry: A Short Course
E. Ochiai – Bioinorganic Chemistry: a survey
B. Literatura uzupełniająca
Bioinorganic Chemistry and Applications – czasopismo naukowe

B. Extracurricular readings

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;