UNIWERSYTET GDAŃSKI

Course title
Wykład dyplomowy - Metody badań związków bionieorganicznych / Diploma lecture - Methods to study bioinorganic compounds

ECTS code
13.3.0961

Name of unit administrating study
Faculty of Chemistry

Studies

Field of study	Type	Form	
Chemistry	Bachelor	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
30 h lecture

ECTS credits 2

classes - 30 h
tutorial classes – 5 h
student's own work –15 h

Total: 50 h - 2 ECTS

The academic cycle
2021/22 summer semester

Type of course
elective

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

C. The basic criteria for evaluation or exam requirements

The pass the course will be satisfactory quiz covers the lecture material and self-study assignments. The applied rating scale complies with the regulations at UG.

Required courses and introductory requirements
Lack

Aims of education

Be able to apply the appropriate analytical techniques and theoretical methods for the identification and characterization (qualitative and quantitative) of bioinorganic compounds. To provide students with academic knowledge and skills how to learn through the development of thinking, research, and study skills so that they become excellent problem solvers and creative thinkers who are capable of dealing with change.

Course contents

Spectroscopic (IR, UV-vis, spectrofluorimetry), electrochemical (potentiometric, voltammetry, conductometry) and computational methods (ab initio, molecular dynamics and others). Basic knowledge in the area of statistics, informatics and mathematical methods enabling description of simple relationships in bioinorganic processes.

Bibliography of literature

A. 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.

B. Extracurricular readings

1. C.E. Housecroft, A.G. Sharpe, Inorganic chemistry, Pearson, Prentice Hall, Ed I (2001), Ed II (2005) lub Ed III (2008);

Knowledge

The Student:

1. knows and understands the basic concepts and terminology applied in bioinorganic chemistry and in related scientific areas and disciplines.
2. knows the basic research techniques and tools used in chemistry and selected methods used in related scientific areas and disciplines; knows the process of development of bioinorganic methods; understands the basic techniques used in the isolation, selection, synthesis, modification and analysis of chemical compounds.

Skills

The Student:

1. has the basic ability to use suitable databases indispensable in carrying out operations in the field of bioinorganic chemistry and related scientific areas and disciplines;
2. uses basic analytical techniques (electrochemical and spectroscopic methods) for the description of phenomena and analysis of data; can perform basic data analysis in professional databases used in chemistry.

Social competence

The Student:

1. has the ability to work in a team and effectively plans and organizes his/her work while preparing reviews in the field of biochemistry or related scientific areas and disciplines.
2. is aware of the social role of a chemistry graduate, and understands the necessity of relaying the knowledge and opinions about the achievements of chemistry to the society; understands and recognizes the significance of intellectual property; behaves ethically.
3. knows limitations of his/her knowledge, is willing to constantly upgrade and update his/her knowledge and raise qualifications within the field of chemistry and related scientific areas and disciplines.