

Course title Chemia nieorganiczna / Inorganic chemistry		ECTS code 7.2.0617	
Name of unit administrating study Faculty of Chemistry			
Studies			
Field of study	Type	Form	
Environmental Protection	Bachelor	Full-time studies	
Teaching Staff Dr Dariusz Wyrzykowski			
Forms of classes, the realization and number of hours		ECTS credits 6	
A. Forms of classes, in accordance with the UG Rector's regulations lecture, auditorium classes, laboratory classes		classes - 60 h tutorial classes – 30 h student's own work – 60 h	
B. The realization of activities multimedia presentation, in-class learning, laboratory experiments		Total: 150 h - 6 ECTS	
C. Number of hours 60 h (lecture 15 h, auditorium classes 15 h, laboratories 30 h)			
The academic cycle 2019/2020 summer semester			
Type of course obligatory		Language of instruction Polish	
Teaching methods <ul style="list-style-type: none"> •Lecture with multimedia presentation •The auditorium classes - calculations involving different aspects of inorganic chemistry •Practical laboratory work - chemical experiments, analysis of obtained results and discussion 		Form and method of assessment and basic criteria for evaluation or examination requirements	
		A. Final evaluation, in accordance with the UG study regulations Lectures - exam, lecture - exam, auditorium classes – course credit with a grade lab classes – course credit with a grade	
		B. Assessment methods Lectures - exam with open questions, Auditorium classes – two tests, Lab classes – completion with note	
		C. The basic criteria for evaluation or exam requirements Lecture: positive note from an exam with 15-20 open questions: 91-100%: 5.0 81-90%: 4.5 71-80%: 4.0 61-70%: 3.5 51-60%: 3.0 < 51%: 2.0 Auditorium classes: positive note from two tests, final note is an average from notes from both tests 91-100%: 5.0 81-90%: 4.5 71-80%: 4.0 61-70%: 3.5 51-60%: 3.0 < 51%: 2.0 Lab classes: positive note from each lab test, final note is an average from notes from all the tests 91-100%: 5.0 81-90%: 4.5 71-80%: 4.0 61-70%: 3.5 51-60%: 3.0 < 51%: 2.0	

Required courses and introductory requirements

Basic chemistry

Aims of education

- presenting basic issues in inorganic chemistry to students
- familiarize students with fundamental properties of the elements and inorganic compounds as well as their industrial role
- familiarize students with the basis of chemical calculations in the field of inorganic chemistry

Course contents

Topics of the lecture: periodicity and the chemistry of the elements, physicochemical properties of inorganic and coordination compounds. The following items are included: periodicity, chemical bonding, coordination compounds, types of chemical reactions, properties of chemical elements and their compounds. The groups of elements are presented in the following order: group 1, group 2, group 13, group 14, group 15, group 16, group 17, group 18, and d-elements (groups 3-12; first transition row, second transition row, and third transition row).

Topics of auditory classes: basic types of inorganic compounds, balancing redox reactions, equilibria in the solutions of electrolytes.

Topics of lab classes: investigation of physicochemical properties of the elements, inorganic and coordination compounds based on chemical experiments.

Bibliography of literature

A. Literature required to pass the course

1. *Chemistry of the Elements*, N. N. Greenwood, A. Earnshaw, Elsevier Science & Technology Books, 2005
2. *General chemistry*, Wendell H. Slabaugh, Thera D. Parsons, New York: John Wiley and Sons, 1966
3. *College chemistry : an introductory textbook of general chemistry*, Linus Pauling, Roger Hayward, San Francisco: W. H. Freeman and Company, 1950.
4. *General chemistry*, John H. Sechrist, Wendell H. Powers, Princeton, New Jersey : D. Van Nostrand Company, Inc., 1966
5. *Basic inorganic chemistry*, F. Albert Cotton, Geoffrey Wilkinson, New York: John Wiley & Sons, 1976.
6. *Inorganic chemistry*, Alan G. Sharpe, London : Longman Scientific Technical, New York : John Wiley & Sons, 1992
7. *Inorganic chemistry: an industrial and environmental perspective*, T. W. Swaddle, Thomas Wilson, San Diego: Academic Press, 1997

B. Extracurricular readings

1. *Problem exercises for general chemistry*, G. Gilbert Long, Forrest C. Hentz, New York: John Wiley & Sons, cop. 1978
2. *General chemistry: principles and structure*, James E. Brady, Gerard E. Humiston, SI version prepared by Henry Heikkinen, New York : John Wiley & Sons, 1982
3. *The chemistry of the rare-earth elements*, N. E. Topp, Amsterdam : Elsevier Publ. Co., 1965.