

Chemia nieorganiczna / Inorganic chemistry 7.2.0597 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 regulations ECTS credits 5 A. Forms of classes, in accordance with the UG Rector's regulations classes - 60 h tutorial classes - 30 h student's own work - 35 h B. The realization of activities multimedia presentation, in-class learning, laboratory experiments 60 h (lecture 15 h, audiorium classes 15 h, laboratories 30 h) Total: 125 h - 6 ECTS The academic cycle First year, summer semester Language of instruction Polish Form and method of assessment and basic criteria for evaluate examination requirements	Course title			ECTS code	
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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, group14, 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.

<u>Topics of lab classes</u>: 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, Theran 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. Secrist, 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.