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| **Study program** Chemistry | | | | |
| **Course title** Fundamentals of inorganic chemistry | | | | |
| **Name of lecturer/lecturers** Nikola D. Nikolić | | | | |
| **Type of course** Obligatory | | | | |
| **Number of ECTS allocated** 7 | | | | |
| **Course objectives**  Study of elements and corresponding compounds properties, both by groups and by periods of the periodic table of elements. Inclusion of more problem type data that will be a challenge for students to apply chemistry in different ways and in other fields. Study of the chemistry of s- and p-elements through comparability of general, physical and chemical properties and the most important classes of their compounds. Noticing a change in the type of chemical bond being formed, structure of elements, acid-base and oxidation-reduction properties in groups and periods. | | | | |
| **Course outcomes**  After the course, student will be able to:  - determine and expand the acquired knowledge in general chemistry and be able to follow the courses that follow at higher years and levels of study  - systematizes basic knowledge about elements and their compounds  - approaches to the study and systematization of knowledge in the field of inorganic chemistry in higher years and  levels of study. | | | | |
| **SYLLABUS**  *Lectures*  Periodic table and chemistry of elements. Nomenclature of inorganic compounds. Basic classes of inorganic  compounds. Hydrogen. Elements of group 1/I - Alkali metals. Elements of group 2/II - Alkaline earth metals.  Elements of group 13/III - Elements of the boron group. Elements of group 14/IV - Elements of the carbon group.  Elements of group 15/V - Elements of the nitrogen group. Elements of group 16/VI - Chalcogen elements. Elements groups 17/VII - Halogen elements. Elements of group 18/VIII - Noble gases.  *Laboratory work*  Solving stoichiometric problems and interpreting the results obtained within practical classes. Chemical behavior of hydrogen. Chemical behavior of alkali metals. Chemical behavior alkaline earth metals. Chemical behavior of elements of the 13th group. Chemical behavior of elements 14th group. Chemical behavior of elements of the 15th group. Chemical behavior of oxygen. Chemical behavior sulfur. Chemical behavior of halogen elements. Interesting and educational experiments. | | | | |
| **References**  N.D. Nikolić, Osnovi neorganske hemije, Univerzitet u Nišu, Prirodno-matematički fakultet Niš, 2014.  I. Filipović, S. Lipanović: Opća i anorganska kemija, II deo, Školska knjiga, Zagreb, 1996.  Charles E. Mortimer, Chemistry: A Conceptual Approach. D. Van Nosztrand Compny, New York, 1979.  S. Cotton, G. Wilkinson, Advanced Inorganic Chemistry. John Wiley & Sons, 1976.  M. N. Stanković, Praktikum iz osnova neorganske hemije, Univerzitet u Nišu, Prirodnomatematički fakultet Niš, 2015. | | | | |
| **Active teaching classes** | **Lectures** 60 | | **Laboratory work** 30 | |
| **Teaching mode** Lectures, laboratory work, homework, theoretical exercises | | | | |
| **ASSESSMENT METHODS AND CRITERIA (Max 100 points)** | | | | |
| **Pre exam duties** | **Points** | **Final exam** | | **Points** |
| Activity during lectures | 5 | Written examination | |  |
| Practical teaching | 15 | Oral examination | | 40 |
| Teaching colloquia | 40 |  | |  |
| Seminar |  |  | |  |