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| **Study program:** Doctoral academic studies **-** Chemistry | | |
| **Course title:** Multidisciplinary Aspects of Inorganic Chemistry (H321C) | | |
| **Name of lecturer/lecturers:** Nenad S. Krstić | | |
| **Type of course:** elective | | |
| **Number of ECTS allocated:** 10 | | |
| **Course objectives**  Introducing students with the application of inorganic chemistry in the fields of interdisciplinary research and development. Students will be introduced with the latest scientific research in inorganic chemistry as one of the sciences in them. | | |
| **Course outcomes**  Upon successful completion of this course, the student will be is able to:  - understand the importance of an interdisciplinary approach in research and development,  - can independently monitor, search and process the latest trends in science depending on issues it deals with,  - understand the connection and importance of inorganic chemistry and other sciences (biology, physics, engineering, etc.) in complex research. | | |
| **SYLLABUS**  *Lectures*  Introduction to the subject. Multidisciplinary in research and development. Good laboratory practice (ISO standards). Literature search. Methodology of scientific research. 3D (bio)printing. Inorganic materials in biochemical tests. Inorganic nanomaterials. Sensors on the base of inorganic materials for the detection of inorganic and organic pollutants. Inorganic biosorbents. New aspects of inorganic chemistry in construction. Biomaterials (implants). Magnetic materials, materials for the electronic industry and superconductors. | | |
| **References**  1. R. Xu, Y. Xu, Modern inorganic syntetic chemistry (2nd edition), Elsevier, 2007.  2. T. W. Swaddle, Inorganic Chemistry, An Industrial and Environmental Perspective, Academic Press, 1997.  3. K. H. Büchel, H-H. Moretto, D. Werner, P. Woditsch, Industrial Inorganic Chemistry, Wiley, 2006.  4. R. H. Petrucci, W. S. Harwood, F. G. Herring, General chemistry: principles and modern applications, Pearson/  Prentice Hall, New York, 2007. | | |
| **Active teaching classes** | **Lectures:** 105 | **Laboratory work:** / |
| **Teaching mode:** lectures, seminar, consultations | | |
| **ASSESSMENT METHODS AND CRITERIA (Max 100 points)** | | |
| activity during lectures - 5 points; seminars - 50 points; oral exam - 45 points | | |