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| **Study program:** Master studies Chemistry |
| **Course title:** Inorganic compounds in medicine and pharmacy **(H235C)** |
| **Name of lecturer/lecturers: Maja N. Stanković** |
| **Type of course: elective** |
| **Number of ECTS allocated: 7** |
| **Course objectives**Familiarity with inorganic compounds used in medicine and pharmacotherapy (role, reactivity, etc.). |
| **Course outcomes**After successful completion of this course, the student is able to:Connect the structure of inorganic compounds with their role and application in pharmacotherapy (chemotherapeutics) and diagnostics (modern analysis techniques such as NMR or CET). |
| **SYLLABUS***Lectures*Application of water in medicine and pharmacy. Biologically and medically significant salts: halides, carbonates, sulfates,phosphates. Test methods. Alkaline and alkaline earth metals, biomedical aspects. Biomedical significant transition metals (Fe, Co, Ni, Cu, Zn, Mo). Application of coordination compounds as cytostatics (Pt, Ti, Ru, Ga). Application of gold and silver compounds. Radiopharmaceuticals: d-metal and lanthanide compounds. Compounds of d-metals as contrast agents in magnetic resonance techniques. Macrocyclic ligands in coordination chemistry. Scientific works in the field of synthesis, testing and application of coordination compounds in medicine and pharmacology.*Laboratory work*Preparation of biological material and identification of cationic and anionic components: halides, phosphates, sulfates, alkaline and alkaline earth metals. Analysis of pharmaceutical preparations and products of their interaction with metals. |
| **References**1. R. S. Nikolić, G. M. Nikolić, D. M. Đorđević, N. S. Krstić, KOORDINACIONA HEMIJA – Osnovi, Vežbe i Drugi Oblici Nastave. Prirodno-matematički fakultet Niš, Niš 2010.2. J. C. Dabrowiak, Metals in Medicine. John Wiley and Sons, Ltd, 2009. |
| **Active teaching classes** | **Lectures 45** | **Laboratory work 15** |
| **Teaching mode:** interactive lectures, homework, laboratory exercises, panel discussion |
| **ASSESSMENT METHODS AND CRITERIA (Max 100 points)** |
| **Pre exam duties** | **Points** | **Final exam**  | **Points** |
| Activity during lectures | 5 | Written examination | 30 |
| Practical teaching | 5 | Oral examination |  |
| Teaching colloquia | 60 |  |  |