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| **Study program** Master Studies Chemistry |
| **Course title** Characterization of inorganic compounds (H216C) |
| **Name of lecturer/lecturers** Dragan M. Đorđević, Maja N. Stanković |
| **Type of course** Obligatory |
| **Number of ECTS allocated**  5 |
| **Course objectives**Overview of available methods and techniques for the characterization of inorganic compounds. Acquaintance withmore modern and complex instrumental techniques used in the characterization of inorganic compounds. |
| **Course outcomes**Having finished this course successfully, a student will be able to:• predict the technique and methods for obtaining specific information about inorganic compounds,• with the help of literature, can analyze the results obtained by a specific analysis technique. |
| **SYLLABUS***Lectures*Introduction. Sampling. Statistical processing of measurement results. Characterization of complex compounds.Characterization of inorganic compounds using UV-VIS spectra, FTIR spectra, ESR spectra. Electronic microprobe microscopy. Determination of metals in inorganic samples by AAS and ICP-OES and discussion of the obtained results. Seminar papers.*Laboratory work* Preparation of samples for analysis. Documenting the results, analysis and application of the obtained data (UV-VIS). Documenting results, analysis and application of obtained data (FTIR). Documenting results, analysis and application of obtained data (ESR). Documentation of results, analysis and application of obtained data (ICPOES). Analysis of scientific works in the field of application of modern methods of characterization of inorganic compounds. Preparation of samples for analysis. Work demonstration and work on appropriate instruments (UV-VIS, FTIR, ESR, ICP-OES). |
| **References**1.P. Patnaik, Handbook of environmental analysis: chemical pollutants in air, water, soil and solid wastes, 2nd ed., Boca Raton (2010).2. F. M. Dunnivant, Environmental laboratory exercises for instrumental analysis and environmental chemistry, Hoboken (2004).3. D. A. Skoog, F. J. Holler, T. A. Nieman, Principles of Instrumental Analysis, Saunders Golden Sunburst Series, Brooks Cole (1997).4. R.V. Parish, NMR, NQR, EPR, and Mossbauer Spectroscopy in Inorganic Chemistry, Ellis Horwood Ltd., (1991). |
| **Active teaching classes** | **Lectures**  45 | **Laboratory work**  30 |
| **Teaching mode**Method of oral presentation, method of demonstration, method of experimental work, homework, seminar paper. |
| **ASSESSMENT METHODS AND CRITERIA (Max 100 points)** |
| **Pre exam duties** | **Points** | **Final exam**  | **Points** |
| Activity during lectures | 5 | Written examination |  |
| Practical teaching | 5 | Oral examination | 30 |
| Teaching colloquia | 50 |  |  |
| Seminar | 10 |  |  |