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| **UNIVERSITY OF NIŠ** | | | | | | |
| **Course Unit Descriptor** | | Faculty | | | Faculty of Science and Mathematics | |
| GENERAL INFORMATION | | | | | | |
| Study program | | | | Chemistry | | |
| Study Module (if applicable) | | | | / | | |
| Course title | | | | Analytical chemistry I | | |
| Level of study | | | | x Bachelor ☐ Master’s ☐ Doctoral | | |
| Type of course | | | | x Obligatory ☐ Elective | | |
| Semester | | | | ☐ Autumn x Spring | | |
| Year of study | | | | 1st | | |
| Number of ECTS allocated | | | | 9 | | |
| Name of lecturer/lecturers | | | | Snezana Mitic | | |
| Teaching mode | | | | X Lectures ☐Group tutorials ☐ Individual tutorials  X Laboratory work ☐ Project work x Seminar  ☐Distance learning ☐ Blended learning ☐ Other | | |
| **PURPOSE AND OVERVIEW (max. 5 sentences)** | | | | | | |
| *The course aims is to provide basic theoretical and practical knowledge about the chemical and physical*  *principles which is important for analytical chemistry. After this course the student should be able to understand the interaction between the ions in the aqueous solution; adopt the principles of chemical equilibrium in aqueous solutions*  *acids, bases, salts, complex compounds and others.* | | | | | | |
| **SYLLABUS (brief outline and summary of topics, max. 10 sentences)** | | | | | | |
| **The importance and role and analytical chemistry. Composition of the solution. The amount of the substance and concentrations. Basic types of chemical reactions in analytical chemistry. Acids and bases. The theory of acids and bases. The role of the solvent. The ionic product of water and the pH. Buffers. Acid-base indicators. Complexation reactions. The concept, characteristics and structure of the complex. Some analytical important complex compounds. Calculation of the equilibrium concentration of metal ions in complex solutions. The solubility and the solubility of the product. The effect of common ions on solubility. The effect of foreign ions. The effect of acidity and complexation on solubility of the precipitate. Fractional precipitation. Oxido-reduction reactions. Electrode potential. Nernst equation...** | | | | | | |
| **LANGUAGE OF INSTRUCTION** | | | | | | |
| x Serbian (complete course) ☐ English (complete course) ☐ Other \_\_\_\_\_\_\_\_\_\_\_\_\_ (complete course)  ☐Serbian with English mentoring ☐Serbian with other mentoring \_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | | | | | |
| **ASSESSMENT METHODS AND CRITERIA** | | | | | | |
| **Pre exam duties** | **Points** | | **Final exam** | | | **points** |
| **Activity during lectures** | **5** | | **Written examination** | | | **15** |
| **Practical teaching** | **20** | | **Oral examination** | | | **30** |
| **Teaching colloquia** | **30** | | **OVERALL SUM** | | | **100** |
| **\*Final examination mark is formed in accordance with the Institutional documents** | | | | | | |