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| **UNIVERSITY OF NIŠ** | | | | | | |
| **Course Unit Descriptor** | | **Faculty** | | | **Faculty of Sciences** | |
| **GENERAL INFORMATION** | | | | | | |
| Study program | | | | **Chemistry** | | |
| Study Module (if applicable) | | | | / | | |
| Course title | | | | Advanced technologies for water treatment | | |
| Level of study | | | | Bachelor  Master’s  Doctoral | | |
| Type of course | | | | Obligatory  Elective | | |
| Semester | | | | Autumn Spring | | |
| Year of study | | | | Second | | |
| Number of ECTS allocated | | | | 8 | | |
| Name of lecturer/lecturers | | | | Aleksandar Bojic | | |
| Teaching mode | | | | Lectures Group tutorials  Individual tutorials  Laboratory work  Project work  Seminar  Distance learning  Blended learning  Other | | |
| **PURPOSE AND OVERVIEW (max. 5 sentences)** | | | | | | |
| To provide an uderstanding of the modern membrane, advanced oxidation, ion exchange, sorption, electrochemical and biological processes for water treatment. | | | | | | |
| **SYLLABUS (brief outline and summary of topics, max. 10 sentences)** | | | | | | |
| Membrane processes for water treatment: principles of membrane separation, microfiltration, ultrafiltration and reverse osmosis, membrane properties and modules. Advanced oxidation processes: homogeneous photolysis. Advanced oxidation processes: photocatalytic processes. Ion exchange in water purification: natural and synthetic zeolites, organic ion exchangers. The sorption processes for water purification: activated carbon, mineral sorbents, biological sorbents. The ultrasonic water treatment procedures. Electrochemical water treatment procedures: electrodeposition, electrocoagulation, electrooxidation, electroflotation, electroreduction, electrodisinfection. Biological water treatment procedures: aerobic and anaerobic processes. | | | | | | |
| **LANGUAGE OF INSTRUCTION** | | | | | | |
| 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** | **10** | | **Written examination** | | | **50** |
| **Seminars** | **40** | | **Oral examination** | | | **/** |
| **Teaching colloquia** | **/** | | **OVERALL SUM** | | | **100** |
| **\*Final examination mark is formed in accordance with the Institutional documents** | | | | | | |