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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 | Humic substances in the environment |
| Level of study | [ ] Bachelor [ ]  Master’s [x]  Doctoral |
| Type of course | [ ]  Obligatory [x]  Elective |
| Semester  |  [x]  Autumn [ ] Spring |
| Year of study  | 2nd |
| Number of ECTS allocated | 8 |
| Name of lecturer/lecturers | Darko Andjelkovic |
| Teaching mode |  [x] Lectures [ ] Group tutorials [ ]  Individual tutorials [ ] Laboratory work [ ]  Project work [ ]  Seminar [ ] Distance learning [ ]  Blended learning [ ]  Other |
| **PURPOSE AND OVERVIEW (max. 5 sentences)** |
| To provide knowledge about formation of humic substances, their isolation procedures and characterization methods. Special emphasis is given to processes in the hydrosphere and pedosphere involving humic substances, with the overview of interactions of different ingredients with humics that can influence the distribution of pollutants and disturbance of the existing equilibrium in the environment.  |
| **SYLLABUS (brief outline and summary of topics, max. 10 sentences)** |
| Classification, distribution and synthesis of humic substances. Isolation, fractionation and purification of humic substances (extraction of humics from soil; isolation and concentration of humics from water; fractionation of terrestrial and aquatic humics. Characterisation of humics by different chemical and physical methods. Chemical structure of humic substances (hydrolysis, oxidative degradation, reductive degradation, biological degradation. Reaction of humic substances with metal ions. Reactions of humic substances with hydrated oxides. Reaction of humic substances with clay. Reaction of humic substances with organic molecules.  |
| **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** |
| **Seminar** | **20** | **Written examination** | **/** |
| **Project** | **30** | **Oral examination** | **50** |
|  |  | **OVERALL SUM** | **100** |
| **\*Final examination mark is formed in accordance with the Institutional documents** |