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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 | Physico-chemical basic methods of separation in chemistry |
| Level of study | ☐Bachelor **☐** Master’s ☐ Doctoral |
| Type of course | ☐ Obligatory **☐** Elective |
| Semester  |  **☐** Autumn ☐Spring |
| Year of study  | 1st |
| Number of ECTS allocated | 4 |
| Name of lecturer/lecturers | Milan Mitic |
| Teaching mode |  **☐**Lectures ☐Group tutorials ☐ Individual tutorials **☐**Laboratory work ☐ Project work **☐** Seminar ☐Distance learning ☐ Blended learning ☐ Other |
| **PURPOSE AND OVERVIEW (max. 5 sentences)** |
| *The main objective of the course is to provide the basic theoretical and practical knowledge of separation techniques. After the course, the student is qualified to make the selection and application of the most suitable method for separation* |
| **SYLLABUS (brief outline and summary of topics, max. 10 sentences)** |
| **Separation techniques. Extraction, basic laws and quantitative characterization. Kinetics of extraction. Solid-phase extraction, kinetics of solid-liquid extraction. Optimization of solid-liquid extraction. Supercritical extraction.****Development and validation of the extraction process. Principles of chromatographic separation. The basic theory. Physical force and molecular interactions. Kinetic processes in chromatography. Optimization of chromatographic systems, comparison of chromatographic techniques. Qualitative and quantitative analysis. Gas-liquid chromatography. High pressure liquid chromatography. Coupled chromatographic techniques. Development and validation of chromatographic methods.** |
| **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** | **5** | **Written examination** |  |
| **Practical teaching** | **15** | **Oral examination** | **40** |
| **Teaching colloquia** | **40** | **OVERALL SUM** | **100** |
| **\*Final examination mark is formed in accordance with the Institutional documents** |