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| **UNIVERSITY OF NIŠ** | | | | | | |
| **Course Unit Descriptor** | | **Faculty** | | | Faculty of Sciences and Mathematics  Department of Biology with Ecology. | |
| **GENERAL INFORMATION** | | | | | | |
| Study program | | | | **Applied Chemistry** | | |
| Study Module (if applicable) | | | |  | | |
| Course title | | | | **Large scale synthesis of organic compounds** | | |
| Level of study | | | | ☐Bachelor x Master’s ☐ Doctoral | | |
| Type of course | | | | x Obligatory ☐ Elective | | |
| Semester | | | | x Autumn ☐ Spring | | |
| Year of study | | | | second | | |
| Number of ECTS allocated | | | | 7 | | |
| Name of lecturer/lecturers | | | | Goran Petrović | | |
| Teaching mode | | | | x Lectures x Group tutorials ☐ Individual tutorials  x Laboratory work ☐ Project work x Seminar  ☐ Distance learning ☐ Blended learning ☐ Other | | |
| **PURPOSE AND OVERVIEW (max. 5 sentences)** | | | | | | |
| Gaining students to independently devise principles and propose a methodology for industrial organic synthesis. | | | | | | |
| **SYLLABUS (brief outline and summary of topics, max. 10 sentences)** | | | | | | |
| *Theorectical lectures*  Introduction. Similarities and differences of organic synthesis in laboratory and industrial conditions. Optimization methods of organic synthesis in industrial conditions. Techniques and procedures of organic synthesis optimization in industrial conditions. Dimensional analysis. Selection of catalyst, solvent extraction mode, extraction and other methods, optimizing the number of steps in organic synthesis. Preparation of benzene, ethanol and phenol production. Synthesis of aspirin, caprolactam, polyamide, acrolein. Safe application the Grignard and organolithium reagents in the synthesis (3); 13. Catalytic asymmetric Michael Addition in the synthesis of endothelin.  *Practical training: Exercises, Other forms of teaching, Study and research work*  Introducing students to the exercise program, the behavior in the laboratory, their tasks and obligations. The methods of drying and purification of solvents, preparing for synthesis. Synthesis of adipic acid. Synthesis and purification of aspirin, coumarin, indigo and tropinone. | | | | | | |
| **LANGUAGE OF INSTRUCTION** | | | | | | |
| x Serbian (complete course) ☐ English (complete course) ☐ Other \_\_\_\_\_\_\_\_\_\_\_\_\_ (complete course)  x 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** | | | 40 |
| **Practical teaching** | 10 | | **Oral examination** | | |  |
| **Teaching colloquia** | 40 | | **OVERALL SUM** | | | 100 |
| **\*Final examination mark is formed in accordance with the Institutional documents** | | | | | | |