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|  **UNIVERSITY OF NIŠ** |
| **Course Unit Descriptor** | **Faculty**  |  |
| **GENERAL INFORMATION** |
| Study program  | **CHEMICAL TECHNOLOGIES** |
| Study Module (if applicable) | **ORGANIC CHEMICAL TECHNOLOGY AND POLYMER ENGINEERING** |
| Course title | **ORGANIC CATALYSIS** |
| Level of study | [x] Bachelor [ ]  Master’s [ ]  Doctoral |
| Type of course | [ ]  Obligatory [x]  Elective |
| Semester  |  [ ]  Autumn [x] Spring |
| Year of study  | **II** |
| Number of ECTS allocated | 5 |
| Name of lecturer/lecturers | **JELENA ZVEZDANOVIĆ** |
| Teaching mode |  [x] Lectures [ ] Group tutorials [ ]  Individual tutorials [ ] Laboratory work [ ]  Project work [x]  Seminar [ ] Distance learning [ ]  Blended learning [ ]  Other |
| **PURPOSE AND OVERVIEW (max. 5 sentences)** |
| *Introducing students to the basic principles of homogeneous and heterogeneous catalysis, the most commonly used catalysts, their characteristics and contributions to the reactions.* |
| **SYLLABUS (brief outline and summary of topics, max. 10 sentences)** |
| **1. Introduction, definition and types of the catalysis and catalysts. 2. Catalysis performances, characteristics and the main goals. 3. Homogeneous, heterogeneous and biocatalysts. Poisoning and deactivation of the catalyst. 4. The role of catalysis in the chemical industry development. 5. The reaction pathways and mechanisms of catalytic processes. Homogeneous systems heterogenization and heterogeneous systems homogenization. Collision theory. Theory of transition state. 6. Homogeneous catalysis: acid-base catalysis, general, specific and transition metal catalysis. 7. Selected topics of chemical kinetics: theory of heterogeneous catalysis. The diffusion, adsorption / desorption, kinetic models, mechanisms of heterogeneous catalysis I and II. 8. The rate constants of chemical reactions in heterogeneous catalysis – temperature dependence. 10. General characteristics of catalysts, catalytic materials, preparation. The catalysts selectivity and types.**  |
| **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** | **10** | **Written examination** | **-** |
| **Practical teaching** | **-** | **Oral examination** | **70** |
| **Teaching colloquia/Seminar** | **20** | **OVERALL SUM** | **100** |
| **\*Final examination mark is formed in accordance with the Institutional documents** |