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|  **UNIVERSITY OF NIŠ** |
| **Course Unit Descriptor** | **Faculty** |  |
| **GENERAL INFORMATION** |
| Study program  | TECHNOLOGICAL ENGINEERING |
| Study Module (if applicable) |  |
| Course title |

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| Advances in reactors theory  |

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| Level of study | ☐Bachelor ☐ Master’s ☒ Doctoral |
| Type of course | ☐ Obligatory☒ Elective |
| Semester  | ☒ Autumn ☒Spring |
| Year of study  | 2 |
| Number of ECTS allocated | 8 |
| Name of lecturer/lecturers | Ivana Banković-Ilić |
| Teaching mode | ☒Lectures ☐Group tutorials ☐ Individual tutorials☐Laboratory work ☐ Project work ☐ Seminar☐Distance learning ☐ Blended learning ☐ Other |
| **PURPOSE AND OVERVIEW (max. 5 sentences)** |
| The analysis and design of the different types of ideal chemical reactors under steady-state conditions and homogeneous and heterogeneous systems. Modeling reactor. The students are qualifying for individual work in engineering approach of practical and theoretically problems referred to various industrial processes. |
| **SYLLABUS (brief outline and summary of topics, max. 10 sentences)** |
| The analysis of ideal chemical reactors operation. The stability and control of steady-state in continuous stirred tank reactor. The optimization of plug flow reactor. Heterogeneous reaction systems, catalysis. The significance of physical and hemi-sorption for catalytic processes. Non-ideal chemical reactors. Types for non-ideal reactor models. Residence-time distribution function.  |
| **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** |  |
| **Practical teaching** |  | **Oral examination** | **50** |
| **Teaching colloquia** | **40** | **OVERALL SUM** | **100** |
| **\*Final examination mark is formed in accordance with the Institutional documents** |