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|  **UNIVERSITY OF NIŠ** |
| **Course Unit Descriptor** | **Faculty** |  |
| **GENERAL INFORMATION** |
| Study program  | CHEMICAL TECHNOLOGIES |
| Study Module (if applicable) | ECOLOGICAL ENGINEERING |
| Course title | Chemical reactors |
| Level of study | ☒Bachelor ☐ Master’s ☐ Doctoral |
| Type of course | ☒ Obligatory☐ Elective |
| Semester  | ☐ Autumn ☒Spring |
| Year of study  | 4 |
| Number of ECTS allocated | 5 |
| 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 selection and design of the basic types of ideal chemical reactors for complex isothermal reactions and simple and complex non-isothermal reactions under steady-state conditions and homogeneous systems. The students are qualifying for individual engineering approach in the process optimization under non-isothermal and reactor design under unsteady-state conditions. |
| **SYLLABUS (brief outline and summary of topics, max. 10 sentences)** |
| The reactor design for multiple reactions (parallel, consecutive and combined). Unsteady-state operation of mixed flow and plug flow reactors. Isothermal semi-batch reactors. Reactive distillation. Non-isothermal reactor design. The energy balance of different types of chemical reactors (batch, mixed flow and plug flow reactor). Adiabatic reactors. The thermal steady-state stability of mixed flow reactors. The estimation of operating conditions for different reactor types in the case of irreversible and reversible exothermic and endothermic reactions. |
| **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** | **40** |
| **Practical teaching** |  | **Oral examination** | **50** |
| **Teaching colloquia** |  | **OVERALL SUM** | **100** |
| **\*Final examination mark is formed in accordance with the Institutional documents** |