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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** | | | | | | |