|  |
| --- |
|  **UNIVERSITY OF NIŠ** |
| **Course Unit Descriptor** | **Faculty**  |  |
| **GENERAL INFORMATION** |
| Study program  | Postgraduate PhD Study: Technological Engineering |
| Study Module (if applicable) | - |
| Course title | Transport Phenomena |
| Level of study | [ ] Bachelor [ ]  Master’s [x]  Doctoral |
| Type of course | [ ]  Obligatory [x]  Elective |
| Semester  |  [x]  Autumn [x] Spring |
| Year of study  | First |
| Number of ECTS allocated | 8 |
| Name of lecturer/lecturers | Vlada Veljković |
| Teaching mode |  [x] Lectures [ ] Group tutorials [x]  Individual tutorials [ ] Laboratory work [ ]  Project work [x]  Seminar [ ] Distance learning [ ]  Blended learning [x]  Other |
| **PURPOSE AND OVERVIEW (max. 5 sentences)** |
| Understanding the physical essence of mathematical models for momentum, heat and mass transfer as well as interphase transfer. Students will learn to set the balance of momentum, heat and mass transfer. Students will recognize and apply the analogy among momentum, heat and mass transfer, as well as the principles of dimensional analysis and scale-up. |
| **SYLLABUS (brief outline and summary of topics, max. 10 sentences)** |
| Molecular transport mechanism. The general equation of molecular transport. Turbulent transport mechanism. Transfer of momentum, heat and mass by molecular and turbulent mechanism. Balances of momentum, heat and mass transfer (macroscopic and differential). Boundary layer. Analogies among momentum, heat and mass transfer. Interphase transfer. Examples of the application of the principles of transport phenomena. Application of dimensional analysis to solve problems of momentum, heat and mass transfer. Scale-up in Chemical Engineering. |
| **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** | **25** | **Oral examination** | **50** |
| **Teaching colloquia** | **25** | **OVERALL SUM** | **100** |
| **\*Final examination mark is formed in accordance with the Institutional documents** |