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| **UNIVERSITY OF NIŠ** |
| **Course Unit Descriptor** | **Faculty** | Faculty of Mechanical Engineering |
| **GENERAL INFORMATION** |
| Study Program | **Mechanical Engineering** |
| Study Module (if applicable) | - |
| Course Title | Theory of fluid flow transport |
| Level of Study | ☐Bachelor | ☒ Master’s | ☐ Doctoral |
| Type of Course | ☐ Obligatory | ☒ Elective |
| Semester | ☐ Autumn | ☒ Spring |
| Year of Study | I |
| Number of ECTS Allocated | 10 |
| Name of Lecturer/Lecturers | dr Saša Milanović, dr Jasmina Bogdanović-Jovanović |
| Teaching Mode | ☒ Lectures | ☐ Group tutorials | ☐ Individual tutorials |
| ☐ Laboratory work | ☒ Project work | ☒ Seminar |
| ☐ Distance learning | ☐ Blended learning | ☐ Other |
| **Purpose and Overview (max. 5 sentences)** |
| *Students should acquire knowledge in the field of transport by fluid flow. The main aim is enabling students to independently and on scientific principles formulate the equations of transport by fluid flow, model the fluid flow transport and determine the system characteristics.* |
| **Syllabus (brief outline and summary of topics, max. 10 sentences)** |
| *1) Basic Concepts: Pneumatic and hydraulic transport, review of development 2)Properties of transported materials. The basic parameters fluid flow transport. The forces of action and movement of transported materials. Acting forces**2) Movement of material particles (alluvion rate and levitation rate). Movement of non-homogeneous mixture of transported material and fluid. 3) Pneumatic transport of material. The types of pneumatic transport and elements of transport lines. 4) Pneumatic transport of materials in straight pipelines. Pneumatic transport of materials in bends. Low pressure pneumatic lines for material transport. Middle and high pressure pneumatic lines for material transport. 5) Relation of pressure drop and air flowrate (critical velocity, minimum work). 6) Hydraulic transport of materials. 7) Classification of hydraulic transport. Hydraulic transport devices. 8) Flow of suspension. Transport of suspensions. 9) Calculation of pressure drop 10)Method Duran-Kondolioa, Meothod Gorjunova. 11) Other methods and comparative analysis*  |
| **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** | **5** | **Written Examination** | **Max 40, depending on Teaching Colloquia**  |
| **Practical Teaching** | **5** | **Oral Examination** | **50** |
| **Teaching Colloquia** | **40** | **Overall Sum** | **100** |
| **\*Final examination mark is formed in accordance with the Institutional documents** |