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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 | Selected Topics in Mechanical and Hydromechanical Operations |
| Level of Study | ☐ Bachelor | ☐ Master’s | ☒ Doctoral |
| Type of Course | ☐ Obligatory | ☒ Elective |
| Semester | ☒ Autumn | ☐ Spring |
| Year of Study | II |
| Number of ECTS Allocated | 10 |
| Name of Lecturer/Lecturers | Velimir P. Stefanović, Predrag M. Živković |
| Teaching Mode | ☒ Lectures | ☐ Group tutorials | ☐ Individual tutorials |
| ☐ Laboratory work | ☒ Project work | ☐ Seminar |
| ☐ Distance learning | ☐ Blended learning | ☐ Other |
| **Purpose and Overview (max. 5 sentences)** |
| *Course program concept is to broaden the students knowledge of the mechanical and hydromechanical operations in chemical and other industries and to further study the commonly used principles in this area. Students are given the broader insight of all techniques and new trends in this area*. |
| **Syllabus (brief outline and summary of topics, max. 10 sentences)** |
| 1) Introduction, definition and classification of the mechanical and hydromechanical operations; 2) Modern methods of grinding; 3) Classification and sorting; 4) Mixing and fluidization; 5) Hydromechanical Operations; 6) Hydromechanics of precipitation; 7) Fluid flow through porous media and filtration; 8) Selected chapters of centrifugation and centrifugal purifiers; 9) Hydrodynamical classification; 10) Separation of heterogenous gaseous systems; 11) Creation of heterogenous liquid systems – Mixing; 12) Wet dedusting gases procedures. General properties of aerosol sustems and wet dust collector systems; 13) Physical background of aerosol particles separation from the gas flow; 14) Physical background of aerosol particles separation in wet dust collector systems; 15) New trends in mechanical and hydromechanical operations. |
| **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** | **-** | **Written Examination** | **-** |
| **Practical Work** | **50** | **Oral Examination** | **Max. 50** |
| **Teaching Colloquia or Seminar** | **-** | **Overall Sum** | **100** |
| **\*Final examination mark is formed in accordance with the Institutional documents** |