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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 | Diffusion Operations and Apparatuses |
| Level of Study | ☒Bachelor | ☐ Master’s | ☐ Doctoral |
| Type of Course | ☐ Obligatory | ☒ Elective |
| Semester | ☐ Autumn | ☒ Spring |
| Year of Study | IV |
| Number of ECTS Allocated | 6 |
| Name of Lecturer/Lecturers | Mića V. Vukić |
| Teaching Mode | ☒ Lectures | ☐ Group tutorials | ☐ Individual tutorials |
| ☐ Laboratory work | ☒ Project work | ☒ Seminar |
| ☐ Distance learning | ☐ Blended learning | ☐ Other |
| **Purpose and Overview (max. 5 sentences)** |
| *Introducing students to the diffusion operations and equipment in chemical and other industries. Basic principles of diffusion apparatuses design.* |
| **Syllabus (brief outline and summary of topics, max. 10 sentences)** |
| 1) Introduction. Molecular and convective mass transfer. Fick’s law. Mass transfer coefficients. Overall mass transfer coefficients. 2) Classification of mass transfer operations and mass transfer equipment. 3) Distillation: flash distillation, batch distillation. Continuous distillation with reflux. Binary distillation design: McCabe–Thiele graphical method. Packed column distillation. 4) Absorption and Stripping. Packed Columns. Plate Columns 5) Adsorption. 6) Extraction. Liquid–liquid extraction. Solid–liquid extraction (Leaching). 7) Membrane Separation Processes. 8) Crystallization. Other separation processes. |
| **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** | **0** (or max 60 depending on Pre exam Duties) |
| **Practical Teaching** | **5** | **Oral Examination** | **Max. 30** (depending on Project work) |
| **Project work** | **60** | **Overall Sum** | **100** |
| **\*Final examination mark is formed in accordance with the Institutional documents** |