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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 turbomachines | | | | | | | |
| 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 Dragica Milenković | | | | | | | |
| 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 theory of flow in turbomachinery, acquiring skills in design methodology, and determination of the flow characteristics of axial, radial and radial-axial turbomachinery.*  *The main aim is enabling students to formulate equations of motion of fluid flow through turbomachinery, to model turbomachinery components and determine their performance.* | | | | | | | | |
| **Syllabus (brief outline and summary of topics, max. 10 sentences)** | | | | | | | | |
| 1) The equations of motion for liquids and gases. 2) Turbomachinery operating principles. 3) One-dimensional theory. 4) Two-dimensional theory. 5) Three-dimensional flow in turbomachinery. 6) Turbomachinery modeling. 7) Energy losses in turbomachinery. 8) Unsteady fluid flow in turbomachinery. 9) Operating characteristics of axial, radial and radial-axial turbomachinery. 10) Turbomachinery designing methods. | | | | | | | | |
| **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** | | | | | | | | |