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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 | **ENERGY EFFICIENCY IN INDUSTRY, BUILDINGS AND DISTRICT SYSTEMS** |
| 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 | Mitrović M. Dejan, Stojilјković M. Mladen, Blagojević D. Bratislav, Stefanović P. Velimir, Stojanović V. Branislav, Bogdanović P. Božidar |
| Teaching Mode | ☒ Lectures | ☒ Group tutorials | ☐ Individual tutorials |
| ☐ Laboratory work | ☒ Project work | ☒ Seminar |
| ☐ Distance learning | ☐ Blended learning | ☐ Other |
| **Purpose and Overview (max. 5 sentences)** |
| To introduce students with: systematic research of industrial and district energy systems as well as energy systems in buildings, evaluation of energy systems impact of business. Final goal is to train students to find possibilities to improve energy efficiency of energy systems and establishing the system for energy monitoring and management. |
| **Syllabus (brief outline and summary of topics, max. 10 sentences)** |
| Energy management concept; Introducing energy management system; Energy supply and energy demand; Energy indicators; Establishing goals and reaching target values; Statistics; Energy systems, hydraulic systems and pneumatic systems; Building as a whole, buiding envelope and thermal performance; Building energy systems; Energy efficiency in water supply; Energy balance; Project identification and preparation; Increasing energy efficiency and lowering energy costs; Cost benefit analysis *Study and research work*Preparing students for research in the doctoral dissertation by writing a seminar paper on the topic, which is in direct correlation with the consideration of an adequate model of the task of the doctoral dissertation. |
| **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 Teaching** |  | **Oral Examination** | **100** |
| **Teaching Colloquia** |  | **Overall Sum** |  |
| **\*Final examination mark is formed in accordance with the Institutional documents** |