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|  **UNIVERSITY OF NIŠ** |
| **Course Unit Descriptor** | **Faculty**  | Faculty of Occupational Safety in Niš |
| **GENERAL INFORMATION** |
| Study program  | Environmental Engineering |
| Study Module (if applicable) | / |
| Course title | Energy Processes in the Living Environment |
| Level of study | ☐Bachelor ☐ Master’s ☒ Doctoral |
| Type of course | ☐ Obligatory ☒ Elective |
| Semester  | ☒ Autumn ☐Spring |
| Year of study  | Second year |
| Number of ECTS allocated | 10 |
| Name of lecturer/lecturers | Ljiljana Živković, Miomir Raos |
| Teaching mode |  ☒Lectures ☐Group tutorials ☒ Individual tutorials ☐Laboratory work ☐ Project work ☒ Seminar ☐Distance learning ☐ Blended learning ☒ Other |
| **PURPOSE AND OVERVIEW (max. 5 sentences)** |
| *Acquiring knowledge about energy processes in the living environment. Training students to perform exergy analysis of energy processes and their environmental impact.    Optimization of parameters of energy processes in the energy system in the stages of planning, design, exploitation, as well as the environmental impact assessment. The influence on the policy of reducing pollutant emissions. The ability to use the acquired knowledge along with the knowledge, understanding and implementation of basic laws of energy processes in the environment. Understanding and promoting energy processes as a significant element of the environmental impact, along with the analysis of economic and environmental parameters. Promotion of energy efficiency and renewable energy, and the practical application of knowledge in this field.* |
| **SYLLABUS (brief outline and summary of topics, max. 10 sentences)** |
| Energy consumption and the environmental impact. Efficiency and the first law of thermodynamics. Efficiency and the second law of thermodynamics. Exergy analysis of thermal processes. Non‐renewable energy sources and environmental impact. Renewable energy (solar, biomass and geothermal energy). Combustion and environmental impact. Ecological modernisation and renewable energy sources. Energy storage. Climate and climate change. Environmental impact of energy production. The policy of reducing pollutant emissions. |
| **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** | **30** |
| **Practical teaching** | **40** | **Oral examination** | **30** |
| **Teaching colloquia** |  | **OVERALL SUM** | **100** |
| **\*Final examination mark is formed in accordance with the Institutional documents** |