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|  **UNIVERSITY OF NIŠ** |
| **Course Unit Descriptor** | **Faculty**  | Faculty of Technology, Leskovac |
| **GENERAL INFORMATION** |
| Study program  | **CHEMICAL TECHNOLOGIES**  |
| Study Module (if applicable) | ECOLOGICAL ENGINEERING |
| Course title | Energy efficiency |
| Level of study | [x] Bachelor [ ]  Master’s [ ]  Doctoral |
| Type of course | [x]  Obligatory [ ]  Elective |
| Semester  |  [ ]  Autumn [x] Spring |
| Year of study  | II |
| Number of ECTS allocated | 5 |
| Name of lecturer/lecturers | Predrag Rašković |
| Teaching mode |  [x] Lectures [ ] Group tutorials [ ]  Individual tutorials [ ] Laboratory work [ ]  Project work [ ]  Seminar [ ] Distance learning [ ]  Blended learning [ ]  Other |
| **PURPOSE AND OVERVIEW (max. 5 sentences)** |
| The course discusses energy in terms of fundamental concepts, energy resources and different energy conversion technologies. The wide range of metrics, data and indicators to measure energy efficiency, sustainability and profitability will be addressed, including how they are used to shape policies and track progress in processing industry. The course objective is to provide the students with the knowledge and techniques to maximize the utilization of energy, and how to apply the principles of thermodynamics and exergy analysis for evaluating industrial usage of energy. |
| **SYLLABUS (brief outline and summary of topics, max. 10 sentences)** |
| Topics covered: Energy, Energy resources (global and Serbia), Energy carriers; Energy analysis (I and II law of thermodynamic, enthalpy, entropy; Review and energy analysis of most important centralised and decentralised energy supply systems (Power plants, Hydro Power Plants, Nuclear power plants, Cogeneration plants); Concepts, indicators and methodological issues of energy efficiency, Techno-economic evaluation of energy efficiency measures, Exergy analysis.  |
| **LANGUAGE OF INSTRUCTION** |
| [x] 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** | **10** | **Written examination** |  |
| **Practical teaching** |  | **Oral examination** | **60** |
| **Teaching colloquia** |  |  |  |
| **Seminar papers** | **30** | **OVERALL SUM** | **100** |
| **\*Final examination mark is formed in accordance with the Institutional documents** |