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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 | Computer design of power engineering systems |
| Level of Study | ☒Bachelor | ☐ Master’s | ☐ Doctoral |
| Type of Course | ☐ Obligatory | ☒ Elective |
| Semester | ☒ Autumn | ☐ Spring |
| Year of Study | III |
| Number of ECTS Allocated | 6 |
| Name of Lecturer/Lecturers | Živojin M. Stamenković  |
| Teaching Mode | ☒ Lectures | ☐ Group tutorials | ☐ Individual tutorials |
| ☒ Laboratory work | ☐ Project work | ☐ Seminar |
| ☐ Distance learning | ☐ Blended learning | ☐ Other |
| **Purpose and Overview (max. 5 sentences)** |
| *The aim of the course is to introduce all students to the methods and software, which are used for design of power engineering systems and their elements. The course is targeting both the theoretical and practical aspects of the power engineering systems design.* |
| **Syllabus (brief outline and summary of topics, max. 10 sentences)** |
| 1) The software for power engineering systems design. 2) Software for design and generation of technical documentation 3) Software for engineering calculations 4) Software for numerical simulation of fluid flow. 5) Review of enegineering software: AutoCAD, SolidWorks, ANSYS, Excel, Mathcad, Matlab, AFT FATHOM. 6) The methods used in the software, examples of claculation. 7) Basic elements in power engineering systems. The standards and calulation procedures. 8) Calculation of flow, pressure and losses in the pipeline distribution systems and elements used in power systems (valves, branches, elbows, orifices, venturi tubes, nozzles ...) 9) Pumps in the pipeline and a closed circulation circuit. 9) Software for numerical simulation of fluid flow and heat transfer - ANSYS-CFX |
| **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** |
| **Lecture (participation) + Homework** | **5 + 5** | **Written Examination** | **0\* (50)** |
| **Laboratory** | **10** | **Oral Examination** | **Max. 30**  |
| **Two midterm exams** | **50** | **Overall Sum** | **100** |
| **\*** **Refers to students who have already gained points by completing pre-exam requirements** |