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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 | Virtual design process |
| 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 | Dragan S. Milčić |
| Teaching Mode | ☒ Lectures | ☐ Group tutorials | ☐ Individual tutorials |
| ☐ Laboratory work | ☒ Project work | ☒ Seminar |
| ☐ Distance learning | ☐ Blended learning | ☐ Other |
| **Purpose and Overview (max. 5 sentences)** |
| *To familiarize students with the process of designing, methods and tools in the design process. In the exercises, students will apply CAx tools and methods of the virtual design process by working terms of reference in the field of gear power transmitters, using tools for calculation of machine elements and CAD / CAE software Autodesk Inventor.* |
| **Syllabus (brief outline and summary of topics, max. 10 sentences)** |
| The aim and content of the process of constructing. Definition of terms of reference. Technical and economic incentives for the development of new mechanical systems. Development needs, products and technologies. Creating new ideas. A list of demands. The concept conceptual design. Development of forms and dimensions of machine parts place and role of computers in the design process. Concurrent Engineering. Calculation of machine elements using a computer (gears, pulleys, shafts, roller and plain bearings, shaft-hub connections, springs, screws). Tools for calculation of machine elements: PTD, KISSsoft. Modeling the mechanical parts. Parametric modeling. |
| **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** | **10** | **Written Examination** | **0**  |
| **Practical Teaching** | **60** | **Oral Examination** | **30** |
| **Teaching Colloquia** | **0** | **Overall Sum** | **100** |
| **\*Final examination mark is formed in accordance with the Institutional documents** |