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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 | Machine elements 1 |
| Level of Study | ☒ Bachelor | ☐ Master’s |  ☐ Doctoral |
| Type of Course | ☐ Obligatory | ☒ Elective |
| Semester | ☒ Autumn | ☐ Spring |
| Year of Study | II |
| 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 theoretical basis, constructional forms, calculation of machine elements, production, the functioning and aplication of machine elements* |
| **Syllabus (brief outline and summary of topics, max. 10 sentences)** |
| Introduction to the design process. Basics of designing machine elements. The definition of machine elements. Preferred numbers fits and tolerance. Calculation of load capacity of machine elements. Load machine elements. Direct, bending and torsional stress equations. Calculation of principle stresses for varios load combinations. Factor of safety – theories of failure. Design based on strength and stiffnes. Stress concentration. Springs. Design of various types of springs, optimization of helical springs. Elements for rotary motion. Axles and shafts. Rolling bearings. Journal bearings. Design of hydrodynamic journal bearings. Design of hydrostatic journal bearings. Threaded fastners - Design of bolted joints. |
| **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** | **50** |
| **Practical Teaching** | **10** | **Oral Examination** | **0** |
| **Teaching Colloquia** | **30** | **Overall Sum** | **100** |
| **\*Final examination mark is formed in accordance with the Institutional documents** |