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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 | Design of mobile machines |
| Level of Study | ☒Bachelor | ☐ Master’s | ☐ Doctoral |
| Type of Course | ☐ Obligatory | ☒ Elective |
| Semester | ☐ Autumn | ☒ Spring |
| Year of Study | IV |
| Number of ECTS Allocated | 6 |
| Name of Lecturer/Lecturers | Dragoslav B. Janošević |
| Teaching Mode | ☒ Lectures | ☐ Group tutorials | ☐ Individual tutorials |
| ☒ Laboratory work | ☒ Project work | ☒ Seminar |
| ☐ Distance learning | ☐ Blended learning | ☐ Other |
| **Purpose and Overview (max. 5 sentences)** |
| Functional, structural and parametric analysis of mobile (construction, mining, transportation, agricultural and municipal) machines. Methodology development, mathematical modeling and design of mobile machines. Calculation and design of drive systems and kinematic chains of mobile machines. |
| **Syllabus (brief outline and summary of topics, max. 10 sentences)** |
| 1) General definition of mobile machines, 2) Process development and design of machines, 3) Parameters of environment, structure of functions and impact parameters of machines, 4) Concepts of machine kinematic chains, 5) The mathematical model of kinematic chain of machines, 6) Types and shapes mobile machines tools, 7) Modelling relations tools and objects of work 8) Kinematics and dynamics movement of mobile machines on caterpillars and tires, 9) Calculation of hydrodynamic and hydrostatic transmissions movement of mobile machines, 10) Synthesis of driving mechanisms manipulators machine, 11) Systems power assisted management, 12) Mechatronic control systems for mobile machinery. |
| **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** | **5** | **Written Examination** | **50** |
| **Practical Teaching** | **10** | **Oral Examination** | **Max. 35 (depending on Teaching Colloquia)** |
| **Teaching Colloquia** | **35** | **Overall Sum** | **100** |
| **\*Final examination mark is formed in accordance with the Institutional documents** |