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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 | Dynamics of mobile machines | | | | | | | |
| Level of Study | ☐ Bachelor | | | ☐ Master’s | | | | ☒ Doctoral |
| Type of Course | ☐ Obligatory | | | ☒ Elective | | | | |
| Semester | ☒ Autumn | | | ☐ Spring | | | | |
| Year of Study | II | | | | | | | |
| Number of ECTS Allocated | 3 | | | | | | | |
| 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)** | | | | | | | | |
| Analysis, modelling and development of dynamic mathematical model functions, kinematic chains, transmissions and drive mechanisms of mobile (construction, transportation, mining, agricultural and communal) machines. Ability to research and analyze the dynamics of mobile machines in their development, design and testing. | | | | | | | | |
| **Syllabus (brief outline and summary of topics, max. 10 sentences)** | | | | | | | | |
| 1)Fundamentals of teramechanics - characteristics of the land as subjects of labour and reliance mobile machines, 2) Dynamic relations modelling of objects and tools of mobile machinery, 3) Dynamics of moving mobile machines, 4) Dynamic simulation of the kinematic chains of mobile machines, 5) The dynamics of hydrodynamic transmissions motion of mobile machines, 6)The dynamics of hydrostatic transmissions motion of mobile machines, 7) Dynamic simulation of transmission motion of mobile machines, 8) Dynamic analysis driving mechanisms with hydro-cylinders as actuators, 9) Dynamic analysis driving mechanisms with hydraulic motors as actuators, 10) Dynamic simulation of driving mechanisms mobile machines, 11)  Mathematical models for determining the dynamic stability of mobile machines, 12) Stability testing of 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** | | | | | | | | |