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| **UNIVERSITY OF NIŠ** |
| **Course Unit Descriptor** | **Faculty** | Faculty of Mechanical Engineering |
| **GENERAL INFORMATION** |
| Study Program | **Traffic engineering, transport and logistics** |
| Study Module (if applicable) | - |
| Course Title | Vehicle motion theory |
| Level of Study | ☐ Bachelor | ☒ Master’s | ☐ Doctoral |
| Type of Course | ☒ Obligatory | ☐ Elective |
| Semester | ☒ Autumn | ☐ Spring |
| Year of Study | I |
| Number of ECTS Allocated | 7 |
| 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)** |
| Kinematic and dynamic analysis of vehicles on wheels and caterpillars. The theory of braking and vehicles stability. Motion parameters determination and traction of the vehicles on wheels and caterpillars. |
| **Syllabus (brief outline and summary of topics, max. 10 sentences)** |
| 1) Wheel kinematics and dynamics of road and railway vehicles, 2) Vehicle mass distribution, 3) Kinematics and dynamics of straight and curvilinear motion of the vehicle, 3) The reactions of the support and the resistance of the vehicle motion. 4) The theory of towing, 5) The theory of vehicle braking, 6) Stability of vehicle motion and vehicle clearance, 7) Steering control of vehicle motion, 8) The tracked vehicles motion theory, 9) Kinematics and dynamics of tracked vehicles motion with and without of the caterpillars sliding, 10) Resistance of tracked vehicles motion, 11) Towing theory of tracked vehicles, 12) Stability, clearance, braking and steering control of tracked vehicles. |
| **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** | **45** |
| **Practical Teaching** | **5** | **Oral Examination** | **Max. 45 (depending on Teaching Colloquia)** |
| **Teaching Colloquia** | **90** | **Overall Sum** | **100** |
| **\*Final examination mark is formed in accordance with the Institutional documents** |