



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	<input type="checkbox"/> Bachelor	<input checked="" type="checkbox"/> Master's	<input type="checkbox"/> Doctoral
Type of Course	<input checked="" type="checkbox"/> Obligatory	<input type="checkbox"/> Elective	
Semester	<input checked="" type="checkbox"/> Autumn	<input type="checkbox"/> Spring	
Year of Study	I		
Number of ECTS Allocated	7		
Name of Lecturer/Lecturers	Dragoslav B. Janošević		
Teaching Mode	<input checked="" type="checkbox"/> Lectures	<input type="checkbox"/> Group tutorials	<input type="checkbox"/> Individual tutorials
	<input checked="" type="checkbox"/> Laboratory work	<input checked="" type="checkbox"/> Project work	<input checked="" type="checkbox"/> Seminar
	<input type="checkbox"/> Distance learning	<input type="checkbox"/> Blended learning	<input type="checkbox"/> 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**