

Study program: Road traffic			
Course title: Vehicle Dynamics			
Professor/assistant : Tomislav, R, Marinković			
Type of course: compulsory			
ECTS credits: 7			
Pre-requisites:			
Aims of the course Adoption of theoretical and practical knowledge on the dynamics of motor vehicles and their impact on traffic safety. Students need to learn the characteristics of the most influential factors on the dynamics of a vehicle. Training students to solve practical problems.			
Learning outcomes Students should be able to analyze factors that have impact on the dynamics of motor vehicles such as mechanical rolling wheel drive resistance, dynamic traction performance, transfer of power fluctuations vehicles, tire grip, slip, braking, collision.			
Syllabus <i>Theoretical part</i> VEHICLE BRAKING: The Dynamics of the braking action, braking efficiency indicators, braking stability, regulation of the braking system in the regulation of both open and closed circuits (Anti-lock brake system). Vehicle handling: Principles of management theories, vehicle kinematics and dynamics control, automatic control of the vehicle. VIBRATIONS OF VEHICLES: Fundamentals of the theory of random fluctuations, mathematical models of the stochastic oscillations of the vehicle, excitation function, transfer function, response, driving comfort. Driving safety. <i>Practical part :</i> Making two project tasks according to the content specified in theoretical teaching.			
Literature 1. D. Simić, Dinamika motornih vozila, Kragujevac, 1974. 2. M. V. Tomić, S.V. Petrović: motorna vozila, Tehnička knjiga Beograd, 1973. 3. S. Stamenković, Dinamika, VTŠ Niš, 2004.			
Number of active classes			Other forms of teaching:
Lectures: 60	Practical classes: 45	Research work:	
Teaching methods Combined, interactive approach with practical problem solving.			
Grading system (maximum 100 points), grading scale from 5 to 10: below 51 points grade 5, grade 6 from 51-60 points, grade 7 from 61-70 points, grade 8 from 71-80 points, grade 9 from 81-90 points, grade 10 from 91-100 points.			
Pre-exam obligations	points	Final exam	points
activity during theoretical lectures	5	written exam	30
practical training	5	oral exam	
colloquium(s)/seminar papers	40/20		
Sum	70	Sum	30