Course Unit Descriptor

Study Programme: Mechanization and Construction Engineering			
Course Unit Title: Motor Vehicle Simulation and Modelling			
Course Unit Code: M2515			
Name of Lecturer(s): Stojić Boris			
Type and Level of Studies: Master level			
Course Status (compulsory/elective): compulsory			
Semester (winter/summer): winter			
Language of instruction: English			
Mode of course unit delivery (face-to-face/distance learning): face-to-face			
Number of ECTS Allocated: 5			
Prerequisites: None			
Course Aims: Acquiring fundamental theoretical and practical knowledge in the field of simulation and motor vehicle modeling.			
Learning Outcomes: Enabling for utilization of acquired knowledge and skills in independent or team work, as well as ability for further advancement in the field of simulation and motor vehicle modeling.			
Syllabus: Definitions and basic concepts. Types of vehicle models. Full-vehicle models. Tyre models. Software simulation of the dynamic behavior of the vehicle - the analysis the effects of the vehicle inertial and design parameters (mass, moment of inertia, center of gravity position and stiffness, damping and kinematics of suspension system) in the vertical, longitudinal and lateral dynamics of the vehicle during maneuvers and the characteristic modes of motion (crossing road bumps, acceleration / braking, turning, the standard tests - lane change and Fishhook "J" maneuvers). Kinematic and dynamic modeling of mechanical vehicle subassemblies (suspension, steering, transmission) using the multi-body software MSC Adams.			
Required Reading: Relevant literature in English, tbd			
Weekly Contact Hours: 4	**Lectures: 2**	**Practical work: 2**	
Teaching Methods: Lectures, computer classes, consultations.			
Knowledge Assessment (maximum of 100 points):			
Pre-exam obligations	points	**Final exam**	points
Group assignment		Examination Assignment	
Exercises			
Test			
Test			
The methods of knowledge assessment may differ; the table presents only some of the options: written exam, oral exam, project presentation, seminars, etc.			