Information sheet for the course
Computer Modelling of Solid Body Systems I

University: *Alexander Dubček University of Trenčín*	
Faculty: *Faculty of Industrial Technologies in Púchov*	
Course unit code: *MI-I-PV-11F*	**Course unit title:** *Computer Modelling of Solid Body Systems*
Type of course unit: *optional*	
Planned types, learning activities and teaching methods: *Lecture: 2 hours weekly/26 hours per semester of study; face to face* *Seminar: 0* *Laboratory tutorial: 3 hours weekly/39 hours per semester of study; face to face*	
Number of credits: 6	
Recommended semester: the 2nd semester in the 1st year of the full-time form of study, the 2nd semester in the 1st year of the part-time form of study.	
Degree of study: the 2nd degree of study (Engineering degree)	
Course prerequisites: *none*	
Assessment methods: *To accomplish the given subject, student is obliged to be present at the lessons with the reference to specifications introduced in the study rules for the given study programme. He/she is also obliged to elaborate and defend the terminal or semestral work which is focused on virtual model of solid body systems while the numerical solution based on finite element method in ADAMS software system is used. The mentioned solution is closely connected with the trajectory, speed or velocity and acceleration for the individual solid bodies.*	
Learning outcomes of the course unit: *Student is able to create virtual model of the solid body system and he/she can use numerical analysis in relation to ADAMS software system with the reference to the trajectory, speed or velocity and acceleration for the individual solid bodies.*	
Course contents: *Structural analysis of the mechanical systems. Analytical kinematics. Kinematics of the point and solid body in the matrix formulation. Fundamental or basic kinds of motion. Kinematic analysis of linked mechanical systems with the lower pairs. Analysis of the position, velocity and acceleration. Kinematic analysis of robots and manipulators. Analytical statics. Principle of the virtual models.*	

Recommended or required literature:
1. Haug, E.J. : Computer Aided Kinematics and Dynamics, Vol. I: Basic Methods, Allyn & Baycon 1989.
2. Brát,V.: : Maticové metódy v analýze a syntéze prostorových vázaných mechanických systémů, Academia Praha, 1981.
3. Stejskal,V.: Kinematics and Dynamics of Machinery, Marcel Dekker, New York, 1996.

Language: *Slovak*					
Remarks: —					
Evaluation history: /Grading system/					
A	B	C	D	E	FX
Excellent	*Laudable*	*Good*	*Accepted results*	*Pass*	*Fail*

Lecturers: *prof. Ing. Ján Vavro, PhD., doc. Ing. Ján Vavro, PhD.*
Last modification: *31.03.2014*
Supervisor: *prof. Ing. Darina Ondrušová, PhD.*