

Information sheet for the course Mechanics of Solid Bodies II

University: <i>Alexander Dubček University of Trenčín</i>	
Faculty: <i>Faculty of Industrial Technologies in Púchov</i>	
Course unit code: <i>MT-P-22</i>	Course unit title: <i>Mechanics of Solid Bodies II</i>
Type of course unit: <i>compulsory</i>	
Planned types, learning activities and teaching methods: <i>Lecture: 2 hours weekly/26 hours per semester of study; face to face</i> <i>Seminar: 0</i> <i>Laboratory tutorial: 2 hours weekly/26 hours per semester of study</i>	
Number of credits: <i>5</i>	
Recommended semester: <i>the 4th semester in the 2nd year of the full-time form of study,</i> <i>the 4th semester in the 2nd year of the part-time form of study.</i>	
Degree of study: <i>the 1st degree of study (Bachelor's degree)</i>	
Course prerequisites: <i>accomplishment of MT-P-15 (Mechanics of Solid Bodies I)</i>	
Assessment methods: <i>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 prepare and defend the determined semestral or terminal work, while the given work consists of numerical resolution relating to three specified tasks including bar construction, beam construction and solid entity system.</i>	
Learning outcomes of the course unit: <i>Student has acquired and is familiar with all required and fundamental principles and he/she is able to solve the tasks in the field of kinematic as well as dynamic analysis with the reference to the motion of the solid body or the whole solid body systems. The knowledge obtained and principles introduced through Mechanics of Solid bodies II are the initial study materials for Mechanics of Solid Bodies III.</i>	
Course contents: <i>Fundamental principles and knowledge relating to theory of mechanisms and analytic methods for kinematic solutions. The fundamental principle of the virtual powers and utilisation of the given principle from the aspect of application relating to static resolution of mechanisms and bar constructions. Basic terms standing for dynamics include the space, time and weight or mass. The first part of Lecturers is closely connected with kinetic equations relating to mass point in various coordinate systems and moreover, basic laws of dynamics for mass point, the central gravity motion of the system of mass points and solution of dynamics for the system of mass points are also included into this first part of Lecturers. The second part of Lecturers is focused on the dynamics of solid body (entity) and solid body systems where the relaxation techniques and method of reduction of mass and force variables is introduced. Furthermore, the basic principles of analytic dynamics and fundamental facts relating to impact theory are presented. The vibrations of the mass point with one degree of freedom and vibration of the systems with several degrees of freedom represent one of the most important sub-parts of the Lecturers.</i>	
Recommended or required literature: <i>1. Brousil, Slavík, Zeman: Dynamika, SNTL Praha, 1989</i> <i>2. BRAT, V.: Příručka kinematiky s příklady, 1976.</i> <i>3. JANČINA, J., PEKÁREK, F.: Mechanika II - Kinematika, SNTL Bratislava 1987.</i> <i>4. Juliš, K., Brepta, R.: Mechanika I, II, SNTL Praha 1987.</i> <i>5. JULIŠ, K., BREPTA, R. a kol.: Mechanika II, Dynamika, SNTL, Praha 1987.</i> <i>6. Medvec, Stradiot, Záhorec, Caban: Mechanika III, Dynamika, SNTL Praha, 1988</i> <i>7. Vavro, Husár: Laboratórne cvičenia z mechaniky, Žilina, 1995</i> <i>8. Vavro, J., Kopecký, M.: Nové prostriedky a metódy riešenia sústav telies I. 1.vyd. ZUSI Žilina 2001.</i>	

9. Vavro, J. - Kopecký, M, Sága, M., Fandáková M.: *Nové prostriedky a metódy riešenia sústav telies II. 1.vyd. Digital Graphic Trenčín 2004, ISBN 80-968337-9-0.*

Language: *Slovak*

Remarks: —

Evaluation history: /Grading system/

A	B	C	D	E	FX
<i>Excellent</i>	<i>Laudable</i>	<i>Good</i>	<i>Accepted results</i>	<i>Pass</i>	<i>Fail</i>

Lecturers: *prof. Ing. Ján Vavro, PhD., doc. Ing. Ján Vavro, PhD.*

Last modification: *31.03.2014*

Supervisor: *doc. Ing. Marta Kianicová, PhD.*