Information sheet for the course: Selected Chapters from the Mechanics of Bodies II

University:	Alexander Dubček University of Trenčín

Faculty: Faculty of Industrial Technologies in Púchov	
Course unit code: PP-P-22	**Course unit title:** Selected Chapters from the Mechanics of Bodies II

Form, scope and meth od of educational activity:
Form of study: Lecture / Seminar / Laboratory tutorial
Recommended number of lessons (hours):
Weekly: 2 / 2 / 0   **During the semester:** 24 / 24 / 0   **Method of study:** combined

Number of credits: 5

Recommended semester: 4

Degree of study: The 1st degree of study

Course prerequisites: PP-P-15 - Selected chapters from the mechanics of bodies I

Assessment methods:
Assessment during the semester:
Summary assessment of work results during the semester = 40 points
Independent work during the semester.
Development and defense of the semester thesis, which consists of the numerical solution of assigned tasks in the field of kinematics and dynamics.
A student who obtains at least 20 points in the interim evaluation can apply for the exam.
Final assessment:
Assessment of exam results = 60 points
The exam is conducted in written form.
Grading scale:
Grade A: 91 – 100 points
Grade B: 81 – 90 points
Grade C: 71 – 80 points
Grade D: 61 – 70 points
Grade E: 55 – 60 points
Grade FX: less than 55 points

Learning outcomes of the course unit:
The student can independently apply the acquired knowledge and solve tasks in the field of kinematic and dynamic analysis of the movement of the body or system of bodies. The knowledge gained in the Selected chapters from the mechanics of bodies II will be used immediately in the Selected chapters from the mechanics of bodies III.

Course contents:
Basic knowledge of the theory of the composition of mechanisms, analytical methods of kinematic solution. Motion equations of a mass point in different coordinate systems and with the basic theorems of the dynamics of a mass point, the movement of the center of mass of a system of mass points and the solution of the dynamics of a system of mass points. Dynamics of a rigid body and a system of bodies by the method of relaxation and the method of reduction of mass and force quantities. Fundamentals of analytical dynamics and fundamentals of theory all at once. Oscillation of a material point with one degree of freedom and oscillation of systems with several degrees of freedom.

Recommended of required reading:
1. VAVRO JÁN: Kinematic and Dynamic Analysis of Planar Mechanisms by Means of the SolidWorks Software, Tribun EU s. r. o., Brno, 2020.
2. Ferdinand P. Beer, E. Russell Johnston, Jr.: Vector Mechanics for Engineers, Statics and Dynamics, 1988 USA, ISBN 0-07-079923-7.
3. VAVRO, J., KOPECKÝ, M.: Nové prostriedky a metódy riešenia sústav telies I. 1.vyd. ZUSI Žilina, 2001.
4. VAVRO, J., KOPECKÝ, M., VAVRO, J.ml.: Nové prostriedky a metódy riešenia sústav telies III - 1. vyd. - Trenčín : TnUAD, FPT, 2007, 150 s. ISBN 978-80-8075-256-9.
5. E-learning TnUAD.

Language:
English

Remarks:
Compulsory course / Profile course

Evaluation history: 0
Total number of graded students:

A	B	C	D	E	FX
0.0	0.0	0.0	0.0	0.0	0.0

Lecturers: prof. Ing. Ján Vavro, CSc.

Last modification: 31.08.2022

Supervisor: doc. Ing. Ján Vavro, PhD.