

## Information sheet for the course Engineering Mechanics II

<b>University:</b> <i>Alexander Dubček University of Trenčín</i>					
<b>Faculty:</b> <i>Faculty of special technology</i>					
<b>Course unit code:</b> <i>ŠST/B/4-22/d</i>			<b>Course unit title:</b> <i>Engineering Mechanics II</i>		
<b>Type of course unit:</b> <i>compulsory</i>					
<b>Planned types, learning activities and teaching methods:</b> <i>2 lecture hours and 2 hour seminars per week</i>					
<b>Number of credits:</b> <i>4</i>					
<b>Recommended semester:</b> <i>3<sup>st</sup> semester in the 2<sup>st</sup> year of study /full-time / 4<sup>st</sup> semester in the 2<sup>st</sup> year of study /part-time /</i>					
<b>Recommended semester:</b>					
<b>Degree of study:</b> <i>I.</i>					
<b>Course prerequisites:</b> <i>ŠST/B/4-21/d Engineering Mechanics I</i>					
<b>Assessment methods:</b> <i>100% participation in exercises, fulfilling the objectives set exercises, min. 60% attendance at lectures, demonstrate knowledge of subject content in written and oral examination.</i>					
<b>Learning outcomes of the course unit:</b> <i>The student has a deep knowledge of cross-cutting technical mechanics, expand your knowledge of the foundations of Newtonian mechanics, the fundamentals of dynamics.</i>					
<b>Course contents:</b> <i>Newton's laws, mechanisms with constant ratio, smooth transfer. Spherical motion. Euler angles, Euler kinematic equations. The general spatial motion of the body. The synthesis. Dynamics of rigid bodies, quadratic moment of inertia. SUMMARY reduction. Translation, rotation and general movement of the body. D Alambertov principle. Balancing of rigid rotors. A general plane and a body's. The kinetic and potential energy. Euler dynamic equations. Basics of a sudden. Lagrange equations II. kind. Oscillations of particle. Linear springs. Strength, work and shift linear springs.</i>					
<b>Recommended of required reading:</b> <i>BARBORÁK, O., BARTOŠOVÁ, L., BARBORÁKOVÁ, S.: Základy technickej mechaniky, 1. vydanie, vydal: Ing. Peter Gerši - GC TECH Trenčín, 2013, ISBN 978-80-971446-0-9, 151 strán.</i> <i>BARBORÁK O.: Technická mechanika. Dubnický technologický inštitút, Dubnica n. V., 2007.</i> <i>GRAJCIAR I., SÁGA M., ŽMINDÁK M.: Základy mechaniky telies I - Mechanika tuhých telies, Fatrapress s.r.o., Žilina, 2003.</i> <i>HORAL P.: Statika a dynamika, VŠB. Technická univerzita, Ostrava, 2003.</i> <i>PODEŠVA J.: Základy mechaniky. VŠB - TU, Ostrava, 2004.</i> <i>PODEŠVA J.: Dynamika v príkladech. VŠB - TU, Ostrava, 2002.</i> <i>SEDLÁK I., KONEČNÁ H.: Technická mechanika - Dynamika. Univerzita obrany, Brno, 2005 (S-3643-3).</i> <i>ŠOLEK P.: Technická mechanika II. STU Bratislava, 2009, ISBN 978-80-227-3206-2, 123 strán.</i>					
<b>Language:</b> <i>Slovak</i>					
<b>Remarks:</b> <i>The subject is provided in the winter semester of the second year of full-time study. Compulsory subject.</i>					
<b>Evaluation history:</b> <i>Total number of students being evaluated: 272</i>					
A	B	C	D	E	FX
11,76	14,34	17,65	18,75	31,62	5,88
<b>Lecturers:</b> <i>prof. Ing. Ján Vavro, PhD. - lecturer Dr.h.c. Asooc. prof. Ing. Oto Barborák, CSc. - lecturer Ing. Lenka Bartošová, PhD. - assistant instructor</i>					

**Last modification:** 15.4.2014

**Supervisor:** *prof. Ing. Jiří Balla, CSc., guarantee of the study program “Special Mechanical Engineering Technology”.*