

## Information sheet for the course Engineering Mechanics I

<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>MŠT/B/4-21/d</i>	<b>Course unit title:</b> <i>Engineering Mechanics I</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, attendance teaching method.</i>	
<b>Number of credits:</b> <i>5</i>	
<b>Recommended semester:</b> <i>2<sup>st</sup> semester in the 1<sup>st</sup> year (full-time)</i> <i>3<sup>rd</sup> semester in the 2<sup>nd</sup> year (part-time)</i>	
<b>Degree of study:</b> <i>I. (bachelor)</i>	
<b>Course prerequisites:</b> <i>none</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 knowledge of cross-department focusing on application usage at a level corresponding to the current state of knowledge, provide a comprehensive overview of the basic technical mechanics, familiar with the basics of Newtonian mechanics, the fundamentals of statics and kinematics.</i>	
<b>Course contents:</b> <i>Newton's laws, directional angles of the vector. Force and torque to a point on the axis. Varignon sentence. Central system of forces in a plane and in space. Mobility, binding point. The center of gravity and its importance. Guldin sentence. Static and shape certainty. Passive resistance. The basic principles of kinematics. Position, trajectory, velocity and acceleration of point body in the plane and in space. A general plane and a body's. Analysis of mechanisms, DoF, kinematic chains. Degradation mechanisms of movement. Graphic and methods for the calculation of pro analysi path, speed and acceleration. Overview, meaning and use of mechanisms, graphical and analytical solution mechanisms. Transfers and their use in practice. Simple and composed whip system.</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>BUŠOVÁ B., CABAN S., ŽIARAN S.: Mechanika I - Statika. Skriptá STU, Bratislava, 1996, ISBN 80-227-0831-3.</i> <i>HORYL P.: Statika a dynamika. VŠB - Technická univerzita, Ostrava, 2003.</i> <i>LAŠ V., HLAVÁČ Z., VACEK V.: Technická mechanika v príkladech. Západočeská univerzita, Plzeň, 2003.</i> <i>ONDROUCH J., ŠŇUPÁKOVÁ J.: Příručka statiky s příklady. VŠB-TU, Ostrava 2004.</i> <i>SEDLÁK I., KONEČNÁ H., JANOŠTÁK J.: Technická mechanika - Statika. Univerzita obrany, Brno, 2005.</i> <i>VAVRO J., VAVRO J.: Mechanika I - statika. Trenčianska univerzita A. Dubčeka v Trenčíne, ISBN 978-80-8075-269-9, EAN 9788080752699, 2012.</i>	
<b>Language:</b> <i>Slovak</i>	
<b>Remarks:</b> <i>The subject is provided in the summer semester of the first year of full-time study. Compulsory</i>	

*subject.*

**Evaluation history:**

*Total number of students being evaluated: 175*

A	B	C	D	E	FX
3,43	5,71	20,0	25,14	36,57	9,15

**Lecturers:** *Dr.h.c. Asooc. prof. Ing. Oto Barborák, CSc. - lecturer*

*Ing. Lenka Bartošová, PhD. - assistant instructor*

**Last modification:** *15.4.2014*

**Supervisor:** *Assoc. prof. Ing. Peter Lipták, CSc., guarantee of the study program "Mechanisms in Special Technology".*